

Towards Standardization of Public Building Maintenance Contracts in Saudi Arabia

by

Talal Ali Al-Hazmi

A Thesis Presented to the

FACULTY OF THE COLLEGE OF GRADUATE STUDIES

KING FAHD UNIVERSITY OF PETROLEUM & MINERALS

DHAHRAN, SAUDI ARABIA

In Partial Fulfillment of the
Requirements for the Degree of

MASTER OF SCIENCE

In

ARCHITECTURAL ENGINEERING

January, 1995

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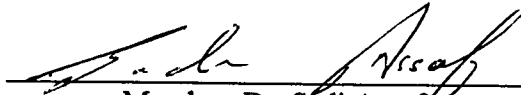
COLLEGE OF GRADUATE STUDIES

This thesis, written by TALAL ALI AL-HAZMI under the direction of his Thesis Advisor and approved by his Thesis Committee, has been presented to and accepted by the Dean of the College of Graduate Studies, in partial fulfillment of the requirements for the degree of MASTER OF SCIENCE IN ARCHITECTURAL ENGINEERING.

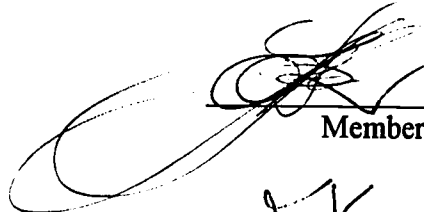
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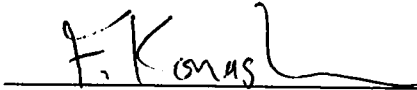
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This work is dedicated to my beloved parents, wife and son for their substantial sympathy and encouragement.

ACKNOWLEDGMENTS

The author acknowledges with gratitude the willing cooperation and assistance received from many governmental agencies, organizations and individuals, so many that it is not possible to mention them all individually.

I wish to express my sincere and deep appreciation to Doctor Abdul Mohsen AlHammad, Thesis Committee Chairman, for his continuous support and guidance. Thanks are extended to Doctor Sadi Assaf, Doctor Edward Harkness and Doctor Farouk Konash, Thesis Committee Members for their ever-continuing support and constructive comments.

Much friendly and helpful advice was received from General Doctor Engineer Adel Salamah, the Director of Engineering and Housing Directorate during my study and preparation of this work. I am also indebted to Mr. Manny Sarmiento and Miss June Helen Boyko for their skilled typing and editing activities of this work.

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THESIS ABSTRACT

FULL NAME OF STUDENT : TALAL ALI ABDULLAH AL HAZMI
TITLE OF STUDY : TOWARD STANDARDIZATION OF
PUBLIC BUILDING MAINTENANCE
CONTRACTS IN SAUDI ARABIA
MAJOR FIELD : ARCHITECTURAL ENGINEERING
DATE OF DEGREE : JANUARY 4, 1995

The aims of the study were to evaluate and analyze the existing public building maintenance contracts and to develop a standardized maintenance contract to be used for all governmental offices in Saudi Arabia. Forty (40) building maintenance contracts were collected from several governmental offices around the Kingdom. These were used to demonstrate the different types of documents that are usually included and also to establish a standardized set of documents to be used in the proposed maintenance contract. Consequently, a questionnaire was developed to measure the opinions of the public owners toward the proposed building maintenance contract to satisfy the objectives of this study. The questionnaire was divided into three major parts namely: Background Information, Types of Maintenance and Operation Contracts and a Proposed Standardized Public Building Maintenance Contract. The questionnaire was mailed to one hundred and ten (110) government departments that represent the population of the study with an overall response of (91%). Subsequently, the data was analyzed by a computer program, namely, "Statistical Analysis Program" (SAS).

The survey results revealed that the proposed standardized public building contract documents which include: General Instruction to Bidders, Special Conditions, Specifications and Scope of Works, Bill of Quantities, Technical Specifications and Basic Contract Charter (Agreement Form) have received dominant support by the respondents. The Agreement Index of the contractual issues of the documents have received the maximum choice of the ordinal scale used, namely, "Strongly Agree". Finally, recommendations were proposed, and one of the most significant recommendations among others - was that legislators shall consider some of the results in the study for incorporation in the building maintenance contract.

MASTER OF SCIENCE DEGREE
KING FAHD UNIVERSITY OF PETROLEUM AND MINERALS
DHAHRAN, SAUDI ARABIA

بسم الله الرحمن الرحيم

خلاصة

اسم الطالب : طلال بن علي بن عبدالله الحازمي

عنوان الدراسة : توحيد عقود صيانة المباني العامة

في المملكة العربية السعودية

التخصص : هندسة معمارية

تاريخ الشهادة : ٢ شعبان ١٤١٥ هـ ، الموافق ٤ يناير ١٩٩٥ م

تهدف هذه الدراسة أولاً الى تقويم وتحليل عقود صيانة المباني العامة المنفذه حالياً في المملكة العربية السعودية ، كما تهدف الدراسة ايضاً الى علاج عقد موحد للصيانة والتشغيل يتم إستخدامه لاحقاً من قبل كافة الدوائر الحكومية .

هذا وقد تم جمع اربعون عقد من عقود صيانة المباني العامة المنفذه حالياً في الدوائر الحكومية وذلك من اجل دراستها وتحليلها للوصول الى وثائق ومستندات موحدة لعقد الصيانة المقترح . اما فيما يتعلق باستطلاع اراء المختصين في الدوائر الحكومية حيال عقد الصيانة المقترح فقد تم جمع المعلومات بواسطة تصميم استبانة قسمت الى ثلاثة اجزاء تتفق مع اهداف الرسالة وهي على النحو الآتي : معلومات عامة ، انماط عقود الصيانة والتشغيل ، الوثائق والمستندات المقترحة لعقد التشغيل والصيانة العام الموحد ، هذا وقد شارك في الإجابة على الإستبانة مدراء مائة وعشرة إدارة حكومية معنيين بالادارة والإشراف على عقود الصيانة وقد كانت نسبة المجيبين عالية جداً وبلغت (٩١٪) تم تحليلها لاحقاً بالحاسب الآلي .

واظهرت نتائج الدراسة تايد المشاركين وبشكل مطلق لعقد الصيانة والتشغيل الموحد وما يشمله من وثائق ومستندات وهي على النحو الآتي : تعليمات عامة للمتنافسين ، الشروط العامة ، الشروط الخاصة ومجال العمل ، جداول الكميات ، المواصفات الفنية ، وثيقة العقد الاساسية ، واظهرت الدراسة ايضاً ان كافة المشاركين وافقوا بشدة على معظم البنود التعاقدية المدرجة في كل وثيقة على حده .

وفي ختام الرسالة قدمت بعض التوصيات واهمها إحاطة وزارة المالية والإقتصاد الوطني بنتائج الدراسة ليتم الإستفادة منها بعد مراجعتها من قبل المختصين .

درجة الماجستير في العلوم

جامعة الملك فهد للبترول والمعادن

الظهران - المملكة العربية السعودية

CHAPTER ONE: INTRODUCTION

1.1 Background:

Maintenance is frequently viewed negatively in most of the governmental offices and in the private sector of Saudi Arabia. In almost all organizations, the maintenance function is primarily viewed as a necessary, disaster-repairing function. However, little effort is spent on trying to conceive maintenance as an important science and that it should be considered as a major step in the design process.

All public tenders in Saudi Arabia are completely subjected to the Government Procurement Laws and Regulations. The Government's ultimate role is to regulate, control and to ensure that all purchases, procurements of government services, supplies, and the implementation of project contracts. This consists of a set of laws that form the general framework of the maintenance and construction contract conditions and administration. These laws were issued in 1977, during the rapid development of construction in the Kingdom.

The preliminary investigation of government procurement laws and regulations has revealed the following criticisms:

1. There is no distinction between a governmental construction contract or a maintenance contract from a laws and regulations point of view.
2. There are no systematic procedures to update the construction and maintenance contractual laws and regulations.

There is very little difference legally, between a building maintenance contract that is really distinctive when compared with other construction and commercial contracts. The architect and engineer are expected to advise the client on the type of contract which is most advantageous.

1.2 Statement of the Problem:

To deal with a maintenance contractor, you should be aware about his business and the environment in which he must operate. The contractor is an independent entrepreneur, providing a service for which he expects a fair profit. Once the decision is made to employ an independent contrac-

tor, a contract should be formulated between the two parties. This will be an agreement between the two parties requiring the contractor to carry out the work for an agreed sum of money. It is pertinent to note, that the interests of the two parties involved are often different and considered to be, in a sense, incompatible.

Most of the maintenance work in Saudi Arabian Governmental Offices are carried out by an independent maintenance contractor. As to date, there is no standardized maintenance contract employed by the governmental ministries in Saudi Arabia. Identifying and analyzing the existing maintenance contracts will be a vital step towards the unification of a standard maintenance contract.

Generally, the efficient and effective use of contractors requires a definition of the scope of work needed. The applicable form of contract, to a reliable, reputable, successful contractor, is coordinated and directed by a knowledgeable owner's representative, to assure maintenance work is completed as scheduled.

1.3 Significance of the Study:

The expected outcome of this study will mainly contribute to the unification of a public maintenance contract in the Kingdom. This study also examines the major differences between the various types of contracts which lie in the method of evaluating the work and the degree of financial risk borne by the contractor and client respectively.

1.4 Objectives of the Study:

The following are the main objectives of the study:

1. Identifying the types of maintenance contracts that exist in different literatures.
2. Identifying the benefits and drawbacks associated with each maintenance contract.
3. Identifying and analyzing the types of maintenance contracts as well as the maintenance contract documents that exist in the governmental agencies in Saudi Arabia.

4. To formulate a standardized public building maintenance contract for all governmental agencies in Saudi Arabia.

Figure (1) demonstrates these objectives and the proposed methodologies that will be followed in order to achieve the thesis objective.

1.5 Scope and Limitations:

The scope of this research will be limited to the studying of governmental maintenance contracts in Saudi Arabia. The treatment is limited to the governmental point of view. Due to the confidentiality and restricted administration procedures in some governmental offices, the study will be confined to those maintenance contracts that can be obtained without any deletion of its contract documents. It is not expected that the final outcome of this study will include a detailed documentation of public maintenance contracts, but the major documents that should be incorporated in the maintenance contract. The types of maintenance contracts to be considered in this study, will be confined to the Governmental Building Maintenance Contract.

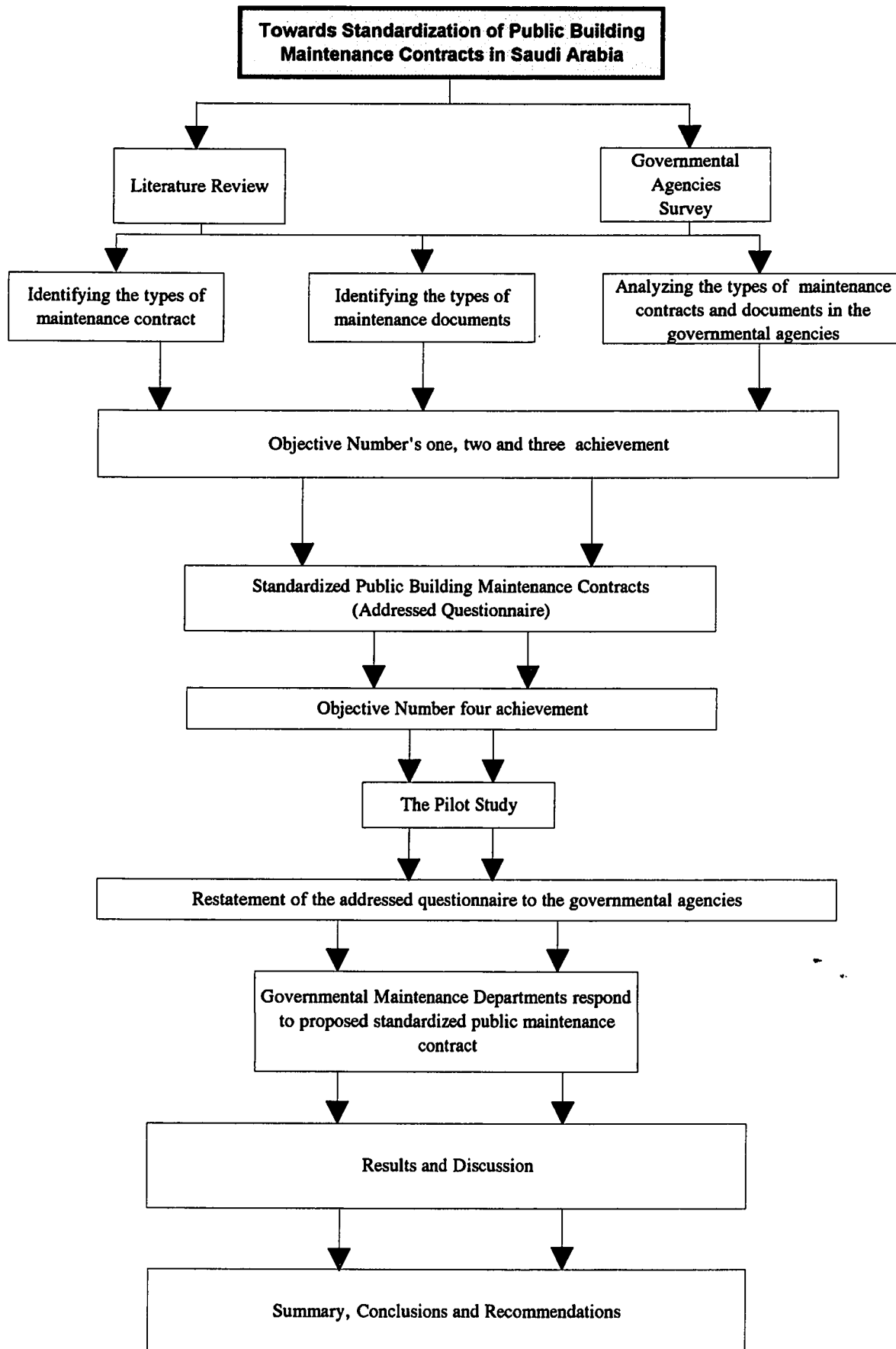


FIG. (1): THESIS OBJECTIVES AND METHODOLOGIES

CHAPTER TWO: LITERATURE REVIEW

The first part of this Chapter is concerned with the various types of maintenance contracts commonly used in the building industry. A maintenance contract is a contract under which one party promises to furnish services, manpower, material and money to maintain or to improve real property for another party who promises to pay for the work performed.

There are eight different types of contracts that are commonly used in maintenance which will be presented in this Chapter with some basic guidelines on deciding when to use each type. There are variations and different combinations of these contracts. The type of contract used is dependent on the type of work, the flexibility required on the job and the advantage one may have over the other in a given situation with respect to the owner.

2.1 Types of Maintenance Contracts:

2.1.1 Fixed Price Contract (Lump-Sum Contract):

"Fixed-Price Contracts are also referred to as Stipulated-Sum or Lump-Sum Contracts. Regardless of which term is used, under this type of contract, the work is done for a set price, based upon competitive bidding or negotiation". (Ref: 8(P:130-138))

Benefits:

"The three (3) main advantages of Fixed-Price Contracts are: First, their great merit lies in the predetermined nature for financial control which is provided by a pre-contract agreement rate (Ref: 9(P:296-299)). Secondly, there is an undivided responsibility for the project, which rests with the single contractor. Thirdly, the contract is flexible with respect to changes". (Ref: 8(P:130-138)).

"Finally, the chief advantage of a Fixed Price Contract is that the owners receive the lowest possible price. Competition ensures this". (Ref:10(P:148-154)).

Drawbacks:

"There are some disadvantages to a Fixed-Price Contract. An unscrupulous contractor may attempt to cut quality to obtain maximum profit, or an incompetent contractor may be awarded the contract on the basis of low-

est bid. Extra work and changes may be overpriced by an unscrupulous contractor. The contractor also has the advantage of being on the job site and knowingly, knows that there is little likelihood that the extra work or changes will be awarded to another contractor. Also, special care may be required to obtain complete contract compliance". (Ref:8(P:130-138)).

"Some other disadvantages are: The time involved is considerably longer than it would be for some other types of contracts. The reason for this is, the plans and specifications have to be completed before the project can be advertised for bids. One cannot take bids until the contractor knows in detail what they must do and can estimate the price. Where the total time to perform a project is more important than price, other types of contracts are better. The main loss of time is in completing the contract document. It is to the advantage of a contractor with a Fixed-Price Contract to finish the work as soon as possible (without overtime). A slow job costs the contractor money".(Ref:12(P:148-154)).

A detailed investigation in forty (40) governmental agencies revealed, that the following maintenance contract references used a Fixed Price Contract (2, 4 - 6, 9, 11, 13, 14, 19, 21, 22, 27, 33, 34, 36, 37).

2.1.2 Cost-Plus-Percentage Fee Contract (Reimbursement Contract):

"Under this type of Contract, the contractor is reimbursed for the cost of all work performed and is paid a fee based upon the final cost of the work". (Ref:8(P:130-138)).

"The "Cost Plus a Percentage Contract" is selected when the cost of a project is immaterial and the owner desires the best materials and workmanship.

It is important in this type of Contract to specify the items that are included in the direct costs and in the overheads and profits.

It is also important that a method be established for the owners to audit the contractor's expenses. The contractor should be required to establish proper accounting procedures". (Ref 12:(P:148-154)).

Benefits:

- a. "The Cost Plus a Percentage Contract makes it desirable for the contractor to use the most expensive materials and methods of installation. The greater the cost, the more money the contractor makes. For this reason, the owners get the very best of materials and the most expensive workmanship.
- b. The owners are in full control. They may change their mind as to their requirements, they may destroy work they don't like, or they may double or triple the requirements. These changes are accepted by the contractor. The contractor makes money on additions and does not lose actual profit on reductions, though the anticipated profit is less.
- c. Work in the field may be started before the plans and specifications are completed. The contractor does not have to know very much about the structure to establish a percentage to cover the overhead and profit. The contractor can therefore accept a project without seeing the plans.

Drawbacks:

- a. The main disadvantage of this type of Contract is the excessive cost. For this reason, few Cost Plus a Percentage contracts are awarded.
- b. There are several reasons for excessive costs on this contract. One, is that it is to the contractor's advantage to increase the cost. The contractor is encouraged to use inefficient (time wasting) labor and expensive materials.
- c. At best, labor will not be efficient. It doesn't take long for the laborer to realize that he is working on a Cost Plus a Percentage Contract. The worker will not be pushed hard and just automatically slows down. Contractors are apt to place the fast workers on a fixed-price construction. This alone can raise the cost, and the contractor has no inducement to discourage this".(Ref:12(P:148-154)).

A detailed investigation in forty (40) governmental agencies in Saudi Arabia revealed that this type of contract was used by the tenth maintenance contract reference only.

2.1.3 Cost Plus a Fixed-Fee Contract:

"The "Cost Plus a Fixed Fee Contract" is the same as a "Cost Plus a Percentage Contract", except that the consideration for the contractor consists of an agreed upon fixed sum of money rather than a percentage of the cost. This means that the fee for the contractor will remain the same even though the final cost of the project may be twice or half the estimated cost.

As the Standardized Maintenance Contract is a combination of the above contracts, it also has some of the advantages and disadvantages.

Benefits:

There are three major advantages of this type of Contract. First, the total time for the project may be reduced by concurrent construction and completion of drawings and specifications. Secondly, the contractor's incentive to cut quality is removed. Thirdly, changes in work are readily made.

Drawbacks:

The major disadvantage to this type of Contract is that the total cost of the project cannot be determined in advance. Also, extensive changes in work may require changes in the fee, keeping costs low which is largely dependent upon the integrity of the contractor". (Ref: 8(P:130-138)).

A detailed investigation in forty (40) governmental agencies in Saudi Arabia indicated, that this type of contract has not been used by any agency in their maintenance contracts.

2.1.4 Cost Plus a Fixed Fee with a Guaranteed Maximum:

"Another type of contract is a "Cost Plus a Fixed Fee with a Guaranteed Maximum". A contractor entering into this type of contract, agrees to build a structure on a cost plus fixed fee basis and also agrees that the work will not cost more than a specified amount of money. In this respect, this type of contract is similar to the Fixed-Price Contract.

The main advantage of this type of Contract is, the owner is obligated to pay only a specific sum of money. The owner has the privilege of making

minor changes in the plans, excluding those that would raise the cost of the project above the amount agreed upon". (Ref:12(P:148-154).

Benefits:

"The main advantage of this type of Contract is, that a maximum cost is assured. If the contractor shares in the savings below the guaranteed maximum, he has an incentive to reduce costs.

Drawbacks:

The disadvantage of a Guaranteed-Maximum Contract is that drawings and specifications must be virtually completed before a contractor is normally willing to establish a guaranteed price. Thus, savings in construction time by concurrent completion of drawings and specifications is reduced. Also, unless savings are shared, keeping costs low is dependent upon the integrity of the contractor". (Ref: 8(P:130-138)).

A detailed investigation in forty (40) governmental agencies in Saudi Arabia revealed, that this type of contractual arrangement has not been used by any agency in their maintenance contracts.

2.1.5 The Unit Price Contract:

"The "Unit Price Contract" is one where the actual amount of work is unknown; so the bidder charges the owner a specific amount of money for each unit or type of work agreed upon. For example, the contractor may agree to excavate, drive piles and place a foundation for a specific project. As the soil conditions are not known, the amount of work cannot be established in advance. In such a case, the contractor can bid a price per cubic yard for excavating; another price per cubic yard for back-filling; a price per foot for driving piles; a price per square foot for building and stripping forms; a price per ton for furnishing and placing each size of anchor bolt required and a price per cubic yard for furnishing, placing and finishing concrete.

Benefits:

- a. The advantages of this type of Contract is, that it allows the owner to receive competitive prices from several contractors when the extent of the work is unknown.

- b. It also allows the owner the freedom to make changes in the volume of work required while the job progresses, without changing the contract.
- c. In addition, it permits the owner to control the amount of money that will be spent. The owner knows the cost of any specified work in advance and can stop work at any stage.

Drawbacks:

- a. There are several disadvantages to the Unit Price Contract. One is the high cost. For protection, the contractor is required to bid for the most expensive process within any unit.
- b. It is very possible that there will be additions with this type of contract. If the details of the project are not known in advance, there is always the possibility of requiring work for which there has been no pre-established unit price. For example, in the before mentioned case, if sleeves were required in the foundation, negotiations would have to be conducted to establish a price.
- c. The cost of inspecting the work is greatly increased with this type of contract. The Clerk of Works not only has to inspect the quality of the work, but, must also make sure the contractor does not do any work that is not required. However, the greatest expense to the architect-engineer and, of course, indirectly to the owner, is the cost of checking quantities. The Clerk of Works will require assistance to check the contractor's delivery of materials and take measurements. These measurements must be accurate, as they determine the cost". (Ref:12(P:148-154)).

A detailed investigation in forty (40) governmental agencies revealed, that the following maintenance contract references used this type of contractual arrangement. (1, 24, 25, 38).

2.1.6 Term Contracts:

"Under this type of Contract, the contractor is given the opportunity to carry out certain types of work within certain limits of cost for an agreed period. The work done is usually priced on either a schedule (measured term) or a cost-reimbursement (daywork term) basis, although for the

larger projects, it may be more advantageous to negotiate a lump sum payment.

Benefits:

1. Lower prices quoted by contractors in consideration of the benefits of an assured program of work. This is probably true, but the estimated cost errors are likely to exceed any marginal allowance that might be made on these grounds. Where a schedule is to be used for the valuation of work executed, the quoted percentage addition must allow for fluctuations in wage rates and material prices over the contract period (usually two years). As wage rates and individual material prices will vary, their proportions in the ultimate workload are not known. The probability that the percentage represents the correct amount is clearly very low.
2. Savings in time and overhead compared with arranging single-job contracts. However, there would obviously be some reduction in pre-contract time, time required for the measurement of completed work for a schedule contract, or, for supervision of and checking accounts for cost-reimbursement contracts, would have little affect. Where the work can be specified with reasonable precision, a negotiated lump sum payment would probably give the greatest total savings in time.
3. The long-term relationship results in the contractor becoming increasingly familiar with the building and the needs of the occupants. In this, it confers some of the benefits of a directly employed labour force, particularly if the same operatives are employed throughout the term.

Drawbacks:

1. The reasonableness of the contractor's rates are tested in open competition and only at infrequent intervals which may become increasingly unfavorable.
2. If a contractor's employment is terminated for any reason, a number of partly finished jobs will be left, which will have to be completed by another contractor at an increased cost.

3. Towards the end of the contract period, the number of orders, especially for the larger jobs, will tail off. The beginning of the next period will reach their normal level only when the new contractor has settled in.

However, on balance it would seem that the Term Contract has considerable advantages in the context of a planned maintenance system. The special relationship subsisting over a period of years, permits the contractor to participate in the planning process and possibly suggest alternative timings for the work, resulting in some cost savings.

Usually, contractor's who have been previously vetted for inclusion in an Approved List, would be invited to tender. The essential information that should be given to contractor's tendering for term contracts are:

1. Form of tender and instructions relating to date and mode of submission and form of acceptance.
2. General Conditions of a contract to be used. Where these have been specially drawn up, a copy should be supplied to the tenderers.
3. The contract area and details of the buildings included in the contract.
4. The contract period and commencement date. Usually the term would be from two to three years with a provision for the annual updating of the rates on an agreed basis, e.g. by reference to a published index.
5. The likely total annual value of work that will be ordered. Although this is not legally binding, it should be borne in mind that the contractor will have taken this into account when fixing his percentage addition to the schedule rates.
6. The maximum value of any single order above, which a lump sum quotation may be required.
7. The method of valuation. The primary means of valuation will be by reference to the Schedule of Rates on which the contractor will be required to quote a percentage adjustment. The aim should be to cover 80 to 90 percent of the jobs with the scheduled rates, with the

daywork element restricted to those jobs which are of such an uncertain nature or executed under such diverse conditions that a Schedule Rate would be inappropriate.

8. Specification of materials and workmanship. This would follow the usual pattern of good building specifications, but covering items of unusual character particular to this type of contract, e.g. constraints imposed by working in occupied buildings.
9. Schedule of Rates. This may be a standard pre-priced schedule or one devised to meet the particular requirements of the building owner. In the latter case, a schedule based largely on numbered composite items can reduce the administrative costs of measurement and valuation". (Ref: 14(P:312-315)).

A detailed investigation in forty (40) governmental agencies in Saudi Arabia indicated, that the following maintenance contract references adopted this type of contractual arrangement (3, 15, 17, 20, 23, 28 - 30, 35, 39).

2.1.7 Schedule Contracts (Time and Material Contract):

"This type of contract is also called a Measure and Value Contract and is useful where details are too scanty to permit the preparation of precise specifications at the time of commencing the work. The schedule lists all the items of labor and material which are expected to be required, also, there may be an Ad Hoc schedule for a particular job based on past experience of similar jobs or a standard schedule designed to cover a wide range of jobs. The schedule may be unpriced. In this case, the contractor's would tender a rate against each item, or there may be standard rates included in the schedule and the contractor's tender by quoting a percentage on or off the standard rates. The work is measured on completion in terms of the schedule items and priced out either at the contractor's rates or at the standard rates plus or minus the quoted percentage. The cost, is therefore, not known until the work has been completed even though the approximate quantities of the various items may be estimated prior to commencement for cost control purposes.

The Property Services Agency (PSA) Schedule is an example of a standard prepriced schedule. It has been suggested, that the PSA could be

taken advantage of by private firms. Although, a convenient way of providing in advance the pricing of work of uncertain scope, it lacks estimating accuracy. The contractor's tenderings are required to state their offers in the form of one or two percentages on or off the schedule rates as a whole. The presumption is, that an overall percentage adjustment will bring the schedule rates into line with those normally charged by the contractors. This is unlikely to be the case for the following reasons:

1. There is little uniformity among contractors regarding the pricing of individual items of work and inevitably some of the schedule rates will be higher and some lower than a particular contractor would normally charge.
2. The mix of items for a particular job may well exaggerate the effect of differences in pricing patterns. For example, a job may consist largely of those items for which the standard rates are higher than the contractor's usual rates and the addition of a percentage would serve only to make the discrepancy even greater.
3. The final cost will depend upon both the quantity and rate for each item comprised in the work executed. If one accepts that some of the schedule rates will be 'high' and some 'low', then the relative quantities of each will affect the outcome.
4. The schedule rates are essentially averages and do not reflect the particular conditions under which individual items of work will be executed.
5. Standard rates tend to be updated at infrequent intervals and the pattern of pricing becomes increasingly inappropriate, due to differential changes in the prices of materials and new working methods.

In order to arrive at a realistic estimate, the contractor tendering should estimate the likely proportions of the scheduled items in the work which would likely be ordered, then, determine a percentage which will equate the cost based on the schedule rates to be obtained using his normal rates. Clearly, this process is shrouded with uncertainty and it is probable that a contractor would merely identify the predominant trades and base his percentage on the estimated quantities of the major items in these trades.

However, in spite of the above defects, a schedule fulfills a number of useful functions. Principally, it establishes standard work descriptions and lays down a pattern of pricing which, although not corresponding precisely to the pattern of prices normally adopted by the individual contractors, is sufficiently close to form an acceptable basis for valuing work executed. The percentage additions also provide a ready means of establishing trends in maintenance prices". (Ref:14(P:307-309))

According to Mr. John E. Heintzelman in his book "The Complete Handbook of Maintenance Management," this type of contract can be called as a Time and Material Contract. A Time and Material Contract is another variation of Cost-Type Contracting. The contractor is reimbursed for the cost of all materials and labor used on the job. For all labor expended, he is reimbursed at stipulated rates for each of the various types of personnel, including supervision. These rates include a markup on the actual wages paid to cover the contractor's overhead and profit. The materials provided are normally invoiced at cost, plus a handling charge. This handling charge is usually a percentage markup over cost, whereby, the contractor covers procurement overhead and gets some profit.

Benefits:

The main advantage to this type of contract is flexibility in changing the scope of work. The contractor merely provides whatever materials and labor are required for the project at the agreed upon rates. There is no additional negotiation required with respect to fee, since the fee is included in the rates. Another advantage may be a reduction in time of completion of the project by concurrent construction and completion of plans and specifications.

Drawbacks:

The major disadvantage to a Time and Material Contract is that the total cost of the contract cannot be determined in advance. There is also a lack of control over the costs. The contractor has no incentive to reduce labor, since by doing so, he would reduce his profit. The contractor also has no incentive to avoid wasting materials.

Under a Time and Material Contract, supervision of the personnel is normally provided by the contractor and there is little opportunity for the buyer to exercise control over the quality of the personnel used on the job.

Because of these factors, some maintenance managers regard a Time and Material Contract as a license to steal, even if cost reputable contractor's are used.

A Time and Material Contract may also be fraught with the same labor relations problems as a Purchased Labor Contract. Therefore, the labor union situation should be analyzed thoroughly before you contract on a time and material basis". (Ref: 8(P:130-138)).

A detailed investigation in forty (40) governmental agencies in Saudi Arabia revealed, that this type of contractual arrangement has not been used by any agency in their maintenance contracts.

2.1.8 Purchased-Labor Contracts:

"A "Purchased-Labor Contract" is one whereby, the seller provides personnel to the buyer at specified hourly rates. The Contract contains an hourly rate schedule for each of the various types of personnel or craftsmen that may be obtained. The Contract is usually an open call type, whereby, the buyer may requisition the amount of personnel in the various craft categories on a daily basis as they may be required during the life of the Contract.

Benefits:

One advantage of this type of Contract is flexibility. The buyer may readily supplement his own, in-house maintenance crew without adding full-time personnel to his payroll. This provides the buyer flexibility in rapidly obtaining additional personnel during peak workload periods or the vacation periods of his own personnel.

One maintenance department in Southern California also found that it was the least expensive way of performing minor construction and rearrangement jobs. Purchased labor is less costly than the total cost for a comparable full-time employee on their own payroll. When the related payroll expenses of the company's employee benefits program were added to the

actual wages paid an employee, the sum was greater than the rates charged by the purchased labor contractor.

Drawbacks:

One disadvantage of a Purchased-Labor Contract is control. The buyer must accept the personnel provided by the seller. If they are not qualified craftsmen, fail to properly follow instructions, or goof off when they should be working, the buyer has little recourse. He may gripe, but he generally pays the bill. Thereafter, he just doesn't ask for that type of labor again or changes to another supplier. As an added feature to the Contract, the buyer may have the right to expressly exclude certain personnel, by name, from being assigned to him. This provides subsequent control over non-achievers who have made themselves known. The buyer, however, does pay for something which he does not get while the non achievers identify themselves.

The use of a Purchased-Labor Contract also may be fraught with labor union problems, particularly if the purchased laborers are not unionized. The main grievances usually center on restricting overtime or using non-union personnel. Problems may also arise if a contractor on the same job site employs unionized personnel. The labor union situation should be analyzed thoroughly before purchased labor is brought onto a job site, otherwise, you may end up creating more problems than you have solved". (Ref:8(P:130-138)).

A detailed investigation in forty (40) governmental agencies in Saudi Arabia revealed, that the following maintenance contract references adopted this type of contractual arrangement (7, 8, 12, 18, 26, 27, 31, 32, 40).

2.2 Contract Documents:

There are eight (8) Contract Documents which are often used in connection with building contracts. With small contracts, it is likely that a Bill of Quantities will be omitted. In cases where a Bill of Quantities is issued, the specifications are not a contract document, unless the contract expressly provides for it. The following can constitute contract documents:

2.2.1 Articles of Agreement.

2.2.2. Conditions of Contract.

- 2.2.3. Specification.
- 2.2.4 Bill of Quantities.
- 2.2.5 Contract Drawings (Ref: 9(P:302-304)).
- 2.2.6 Schedule of Rates (Ref:14(P:329-337)).
- 2.2.7 Bulletins (Ref:12(P:31-34)).
- 2.2.8 Addenda (Ref:12(P:31-34)).

The nature and uses of each of these documents are as follows:

2.2.1. Articles of Agreement:

"These Articles constitute the formal agreement between the employer and the contractor for execution of work in accordance with the other contract documents for the contract sum. The contractor covenants to construct, complete and maintain the works in accordance with the contract and the employer covenants to pay the contractor at the times and in the manner prescribed by the contract.

2.2.2. Conditions of Contract:

These Conditions define the terms under which the work is to be undertaken; the relationship between the employer, architect, quantity surveyor and contractor; the powers of the architect and the terms of payment. The normal standard set of Conditions used for most building contracts is that issued by the Joint Contracts Tribunal and is generally known as the JCT Conditions, currently JCT80. There are four separate sets used on public or private contracts and with or without quantities in each case. Practice notes are issued from time to time to clarify doubtful points. Where a contract is of a very limited extent and the use of the standard comprehensive set of Conditions is not really justified, an abbreviated set of Conditions may be used. Another and popular alternative is to use the Agreement for Minor Building Works. This is well suited for works of alteration and improvement, where no Bills of Quantities are prepared, this will be described in some detail later. On government contracts, the general Conditions (GC/Wks/1) are frequently used, while the Form GC/Works/2 is particularly designed for minor works which is also a set of Conditions for small works". (Ref:9(P:302-304)).

2.2.3. Specification:

"The specification performs a vital role in any building contract, but in recent years there has been a tendency to include it in the Bill of Quantities in the form of preamble clauses, or even more effectively, in annotated bills. Where a Bill of Quantities has been prepared, the specification will not constitute a contract document unless it is a requirement of the particular contract and the contract documents have precedence over documents of lesser standing. Where there is no Bill of Quantities, the specification constitutes a contract document. The specification amplifies the information given in the contact drawing and Bill of Quantities. This describes in detail the work to be executed under the contract and the nature and quality of the materials and workmanship.

Details of any special responsibilities to be borne by the contractor, apart from those listed in the Conditions of Contract, are often incorporated into this document. It may also contain clauses specifying the order in which various sections of the work are to be performed, the methods to be adopted in the execution of the work and details of any special facilities that are to be afforded to other contractors or sub-contractors.

An excellent arrangement for a building Specification is to commence with any special conditions relating to the contract and the extent of the work, then follow with a list of contract drawings; details of the programme; description of access to site; supply of electricity and water; offices and mess facilities; statements regarding suspension of work during frost and bad weather; damage to existing services; details of borings if any; ground water levels and similar general matters.

This section could conveniently be followed by detailed clauses covering the various sections of the work, commencing with materials and then proceeding with workmanship and other clauses. The Specification constitutes a Schedule of Instructions to the contractor with particular reference to the way in which the work is to be undertaken". (Ref: 9(P:302-304)).

"The presentation of information in a Specification may take different forms according to the use of the Specification and whether or not it is to be a contract document. For larger new works, a Specification may be prepared by the architect as part of the initial brief to the quantity surveyor to assist in the preparation of Bills of Quantities. For smaller new works, such as alterations and extensions, it is unlikely that there will be a Bill of Quantities and the contractor will be required to base his tender on the specifications and drawings. Some types of maintenance work drawings may be unnecessary and Specifications will be the sole source of information concerning the work to be done. In all cases, however, the information should be clear and unambiguous. Also, care should be taken to ensure that statements about such matters as the nature of the sub-soil are correct, otherwise, the contractor may be able to rescind the contract or claim damages under the Misrepresentation Act, 1967, or, if the statement has become a term of the contract, sue for breach of contract. Assistance in drafting clauses may be obtained from the National Building Specification or from the publication Specification.

A specification is normally divided into two main parts - Preliminaries and Materials and Workmanship.

2.2.3.1 Preliminaries:

This section gives provisions which govern the general conduct of the contract and the overall extent of the contractor's liabilities. The clauses will have to be drafted to meet the requirements of the particular job and will include such matters as:

- General description of work.

- Form of contract to be used.

- Provision of plant, scaffolding, etc.

- Provision of sheds for storing cement, etc.

- Office for Clerk of Works (if there is one).

- Water, lighting and power.

- Protective measures where work is in occupied buildings.

- Times of access to site, restrictions on method of carrying out work and other items likely to affect the progress.

2.2.3.2 Materials and Workmanship:

This section describes the quality of the materials to be used and the method of construction and standard of workmanship. For new works it is convenient to follow the order in which the Work Sections are given in the Standard Method of Measurement of Building Works (6th edition).

- Demolition
- Excavation and earthwork
- Piling
- Concrete work
- Brickwork and blockwork
- Underpinning
- Rubble walling and masonry
- Asphalt work
- Roofing
- Woodwork (carpentry and joinery)
- Structural steelwork
- Metal work
- Plumbing and mechanical engineering installations
- Electrical installations
- Floor, wall and ceiling finishings
- Glazing
- Painting and decorating
- Drainage
- Fencing

Of course, the above list will have to be modified according to the nature and size of the job. For small works, many of the Work Sections will not be required and also it may be advantageous to group two or more Work Sections together, e.g. Excavation and Concrete work.

For works in alterations and repairs, it will often be necessary to depart from the sequence of Work Sections and adopt a sequence which follows the order in which the work will be carried out on site. In other cases such as internal decoration, it may be more convenient, both from the point of view of preparing the specification and pricing, to group the work according to rooms in the

order in which the rooms will be visited when walking around the building.

However, assuming that the Work Section order is to be followed, the clauses within each Work Section would be grouped as follows:

- a. Clauses of general applicability to the Work Section.
- b. Materials and their preparation, application and protection (in some cases it may be better to group all the materials in a separate section to avoid repeating the description in each Work Section where the material is used).
- c. Work to be done.

The materials are described in the following ways:

- a. Giving a full description stating desirable and undesirable features and any tests with which they should comply.
- b. Stating the relevant British Standard Specification (BSS) - the BSS is usually the minimum quality and that in some cases more than one quality is provided for.
- c. Specifying a proprietary brand or naming a particular manufacturer or source of supply.
- d. Giving a Prime Cost (Pc) Sum and an outline description of the material, this will be useful for such items as sanitary fittings in that decisions as to colour, etc., can be left until nearer the time of fixing.

Adjectives such as 'best' or 'first class' should be avoided unless they are recognized terms used to describe the particular quality required. Also the term 'other equal and approved' should be treated with caution.

The workmanship clauses usually follow the order of carrying out the work on-site and should state precisely what is to be done and how, giving details of any constraints on the method of working, e.g., concreting to stop when the temperature falls below a certain level. Use can be made of BSS Codes of Practice where appropri-

ate and standard Specification clauses for work of a repetitive nature. The right to select sub-contractors for specialty work may be reserved either by naming the sub-contractor or by including a Prime Cost Sum to cover the cost of carrying out the work. Where a part of the work is too ill-defined to describe accurately at the time of preparing the Specification, a provisional sum may be included to cover the estimated cost and an adjustment made to the contractor's sum on completion.

This type of Specification described is called an Operational Specification. This describes the actual physical work to be carried out by the builder. An alternative, is the performance Specification which specifies the performance to be achieved and leaves it to the builder to use his skill and knowledge to devise a physical solution which will meet the performance requirements. Thus, in the case of a central heating system, one could state that the system is required to maintain a minimum temperature of 21°C in each room when the outside temperature is - 1°C and leave it to the contractor to design the system. This places a greater liability on the contractor in that he is liable not only for the quality of the materials used and the standard of workmanship but also for the fitness for purpose of the system, i.e., that it meets the performance requirements". Ref:14(P:329-337)).

2.2.4. Bill of Quantities:

"This consists of a schedule of the items of work to be carried out under the contract with quantities entered against each item. The quantities normally being prepared in accordance with the Standard Method of Measurement of Building Works or the Code for the Measurement of Building Works in Small Dwellings. The Bill of Quantities provides a uniform basis on which tenders can be obtained and when priced, provide a means of comparing the tenders received and of pricing the work on site as executed. The unit rates entered by the contractor against each measured item in the Bill of Quantities normally include an allowance for general overheads and profit". (Ref: 9(P:302-304)).

"A Bill of Quantities sets out, in a systematic manner, the quantities and full descriptions of all the items of labor, materials and

plant required to erect and complete a building. The Preliminary Section of the Bill gives a brief description of the works and of the type of contract to be used. It also details general matters grouped into appropriate sections with each section starting with a set of Preamble Clauses which describe the quality of the main materials to be used and the standard workmanship. Alternatively, instead of giving the Preamble Clauses at the beginning of each section they may be grouped together in a separate section.

Usually the Work Sections follow the order in which they are given in the Standard Method of Measurement, but, other groupings sometimes adopted are by functional elements, i.e., parts of the building which always perform the same function irrespective of the type of construction, or by operations, i.e., site activities.

The Bill of Quantities has two main purposes - firstly, to provide a uniformed basis for competitive tenders by providing each contractor with an accurate statement of the quality and quantity of the work in a form suitable for pricing; and secondly, to provide a schedule of prices for the valuing of variations ordered during the course of the contract. In addition the priced bills facilitate the valuation of interim certificates and settlement of the final account and provide useful cost information for planning future projects". (Ref: 14(P:329-337)).

2.2.5. Contract Drawings:

"These depict the nature and scope of the work to be carried out under the contract. They must be prepared to a suitable scale and be in sufficient detail to permit a contractor to price the Bill of Quantities and to carry out the work satisfactorily. For instance, site plans will normally be drawn to a scale of 1:200 or 1:500, working drawings of buildings probably 1:100, assembly drawings 1:20 or 1:10 and details to 1:10 to 1:5.

All available information on the topography of the site, the nature of the ground and the ground water level, should be made available to contractors tendering for a project. Existing and proposed work must be clearly distinguished on the drawings. For instance, old and new drains and other services are often depicted

in different colours or by different types of lines. With alterations to buildings, it is often preferable to prepare separate plans of old and new work.

All drawings should contain an abundance of descriptive and explanatory notes which should be clearly legible and free from abbreviations. Ample figured dimensions should be inserted on the drawings to ensure maximum accuracy in taking off quantities and in setting out the constructional work on site". (Ref: 9(P:302-304)).

2.2.6 Schedule of Rates:

"These may be Ad Hoc Schedules prepared for a particular job or standard printed schedules for use in term contracts. The Ad Hoc Schedules usually follow the same pattern as a Bill of Quantities but may be either without quantities or with approximate quantities to assist in the evaluation of tenders. A Standard Schedule is one which has been designed to cover a range of repetitive jobs and may be one which is peculiar to a particular organization or one which is more broadly based and of general applicability.

The Property Services Agency of the DOE produces a separate standard of Schedules of Rates for Building Works, for Minor Building Works and for Decoration Work. These are used mainly for term contracts and form the basis for estimating, tendering and pricing. More recently a National Schedule of Rates has been produced jointly by the Building Employers Confederation and the Society of Chief Quantity Surveyors in Local Government. It is a comprehensive microcomputer-based system which has been designed principally for housing work with a maintenance bias. Each item in the Schedule is broken down into labor and material elements, so that it may also form the basis for bonus payments and materials allocation. The rates are updated quarterly to reflect the effect of inflation and changes in the pattern of prices. Also, the BMCIS Price Book provides a useful schedule of the more common maintenance items and the rates are similarly broken down into their labor and material components.

The term Schedule of Rates is also used to describe the list of rates which have been used by the contractor in building up his tender for a lump sum contract and which he is required to submit for the purpose of valuing any variations that might be ordered".(Ref: 14(P:329-337))

2.2.7 Bulletins:

"A "Bulletin" is a request for a price for making a change in the contract. The contractor has a contract to perform a specific task for a specific amount of money. However, in a part of the Specifications called the General Conditions the owner is usually given the right to make changes in the contract. If the owner wishes to make a change, the architect-engineer issues a Bulletin, describing the change the owner wishes to make. The contractor analyzes the change and informs the owner through the architect-engineer of the cost of making the change. This is an offer which the owner has the right to accept or reject. If the owner rejects the offer, the contractor is informed in writing and proceeds as if no Bulletin had been issued.

2.2.7.1 Change Orders:

- A. If the owner accepts the offer of the contractor, a "Change Order" is issued by the architect or engineer. The Change Order gives the contractor authority to proceed with the changes made to the contract by the Bulletin. The price in the contract is revised accordingly.
- B. If a method to determine the cost of extra work is a part of the contract, the change could be described in the Change Order and it would not be necessary to issue a Bulletin.

2.2.7.2 Field Orders:

A "Field Order" is an order issued by the Clerk of the Works, or his employers in the field, making changes in the contract that the contractor agrees to do at no change in the cost.

2.2.7.3 Field Work Orders:

A "Field Work Order" is a change in the contract issued by the architect or engineer in the field when immediate work is required and there is not enough time to issue a Bulletin. The contractor is usually reimbursed on a "Time and Material" basis which has been established in the Proposal Form.

2.2.8 Addenda:

The Addenda consists of changes in the drawings, specifications, or both before the contract is awarded. Each Addendum is sent to each bidder prior to the opening of the bids. The bidder is required to acknowledge receiving each Addendum and to include the price of the work involved to the same extent as if the work was originally shown". (Ref: 12(P:31-34)).

2.3 Order of Importance:

"Obviously, all documents should be in agreement. However, through human error, there are times when they are not. It should be emphasized that the courts do not consider all documents of equal value. By general rule, that which is done last takes precedence. In the event of ambiguity, typed material will take precedence over printed material and handwritten material will take precedence over typed material.

Conforming with the preceding article, a handwritten Field Work Order would normally take precedence over any other document. Any Field Work Order would usually take priority over a Change Order, and a Change Order which involved a change in the contract would take precedence over the contract. The contracts should include all items of the agreement and should, under normal conditions take precedence over all items written before the contract was signed.

In the absence of any specific provisions to the contrary, words will take precedence over drawings. Hence, specifications will always govern if there is a disagreement between them and the drawings". (Ref: 12(P:31-34)).

CHAPTER THREE: GOVERNMENTAL SECTOR MAINTENANCE CONTRACTS

There is a variety of governmental and contractor relationships that have been used in governmental agencies in Saudi Arabia. The choice will be greatly influenced by the particular circumstances and specific restrictions. These range from cost reimbursement or Cost Plus Contracts to truly lump sum contracts. The major difference between these contracts depends on which of the two parties is required to carry-out the work and the incentives which are built into the contract to encourage the contractor to provide the most efficient work to the owner. An examination of the latest forty (40) maintenance contracts which have been used in several governmental departments revealed, that there are six major contract documents with their related contractual issues which were considered as the most important documents to be included in the maintenance contracts. Each major document with its related contractual issues will be defined and is to indicate the benefits to be achieved from incorporating these documents in the maintenance contracts.

A pilot study was performed in several governmental agencies to identify the precise definitions of the maintenance documents and their related contractual issues. These need to be incorporated in the Governmental Maintenance Contracts in the Kingdom of Saudi Arabia.

3.1 First Document: General Instruction to Bidders:

These instructions apply to the preparation of bid price proposals to be submitted to the client. Further specific instructions to bidders may also be issued. Proposals should be submitted only in response to invitations for bids issued by the contracting department in the governmental offices.

The main advantages to be achieved from considering this document in the maintenance contract is to inform all the bidders to the bid requirements and to explain the nature and scope of the contract. Secondly, it helps the bidders to obtain as much information as possible and to answer any questions.

The following are the contractual issues of the first document:

1. Bid Documents Package:

This list includes all major maintenance contract documents that must be obtained by all prospective bidders. The list may include the following set of maintenance contract documents:

- General conditions.
- Specific conditions.
- Basic contract charter (article of agreement).
- Scope of work.
- Specification.

The benefits to be achieved from considering this contractual issue in the maintenance contract is to help the bidders to understand the scope of work, its requirements and specifications and to answer any related questions to the Bid Documents Package. In addition, bidders will be certain that they receive a full Bid Documents Package to help them prepare the bid in accordance with specifications, terms and conditions set forth in the Bid Package.

A detailed investigation into the latest government maintenance contract reveals, that this contractual issue was fully covered in the documents of the following maintenance contract references (2, 9, 12-14, 17-26, 28-40).

And, it was partially covered only in maintenance contract reference no. 15.

Finally, this contractual issue was not included in the documents of the remaining maintenance contract references.

2. Selection of Contractor:

Governmental ministries or agencies can only enter into a contract for maintenance work to be carried out in the Kingdom of Saudi Arabia with a contractor who is professionally approved (or registered) by the authorized contracting department in the governmental agencies.

The benefits of incorporating this contractual issue in the maintenance contracts is to assist the client in having the most efficient and qualified contractor to perform the maintenance work stated in the contract.

A detailed investigation into the latest government maintenance contract indicates that this contractual issue was fully covered in the documents of the following maintenance contract references (2, 10-14, 22, 28-40).

And, it was not partially covered in the documents of the maintenance contract references.

Finally, this contractual issue was not included in the documents of the remaining maintenance contract references.

3. Foreign Contractor Regulations:

These are a set of regulations which were designed to control and regulate the involvement of non-Saudi contractors to enter into a contract for work to be carried out in the governmental agencies. The following are examples of these regulations:

- The Foreign Contractor must assign 30% of the total work of the contract to Saudi sub-contractors.
- The Foreign Contractor must be Ministerially licensed under the laws of Saudi Arabia.
- The Foreign Contractor shall be relieved from assigning 30% of the total work of the contract if he is involved in a partnership or joint venture with Saudi companies and the Saudi partner shall own more than 51% of the total capital of this partnership.

The major advantages to be gained from incorporating this contractual issue in the maintenance contract is to encourage the local Saudi maintenance contractors and to protect them from unfair competition with an experienced and qualified foreign maintenance contractor.

A detailed investigation into the latest Governmental Maintenance Contract reveals that this contractual issue was fully covered in the documents of the following maintenance contract references (2, 22, 28-40).

And, it was not partially covered in the documents of the maintenance contract references.

Finally, this contractual issue was not included in the documents of the remaining maintenance contract references.

4. Preparation of Bids:

Bids should be prepared in accordance with the specifications, conditions, and terms set forth in the Bid Documents. Failure to prepare bids in accordance with the specifications, conditions and terms will be cause for bidder disqualification.

The major benefits to be achieved from including this contractual issue in the maintenance contract is to guide the prospective bidders to the method in which the governmental agencies want the bids to be prepared. This will unify the bidder's proposals submitted by different companies which will facilitate the selection of the most qualified contractor whose bid, in the clients opinion, represents the least overall cost.

A detailed investigation into the latest Governmental Maintenance Contract reveals, that this contractual issue was fully covered in the documents of the following maintenance contract references (2, 12-14, 16, 22, 24-26, 28-40).

And, it was only partially covered in the documents of the first maintenance contract references.

Finally, this contractual issue was not included in the documents of the remaining maintenance contract references.

5. Site Visit Requirements:

All bidders are required by the governmental agencies to visit the work site and collect the necessary technical information required in the contract. Bidders are required to present a site visit certificate signed by a Ministry representative to prove their attempt to visit the site.

The following are considered to be the major benefits to be achieved from considering this contractual issue in the maintenance contract:

- bidders will be aware of the site location and its conditions.
- bidders will be fully addressed to all the buildings, systems, equipment and other building components to be maintained.
- this contractual issue will protect the client from future contractor claims or disputes regarding site location or its condition.

A detailed investigation into the latest Governmental Maintenance Contract reveals, that this contractual issue of site visit requirements was fully covered in the documents of the following maintenance contract references (2, 3, 5, 7, 10-14, 17-27, 32-35).

And, it was only partially covered in the documents of the maintenance contract, reference number fifteen (15) only.

Finally, this contractual issue was not included in the documents of the remaining maintenance contract references.

6. Contract Document Contradiction:

This contractual issue demonstrates to all bidders that all documents of the contract should be in agreement. However, it should be emphasized that all documents are not considered of equal value and importance. By general rule, that which is done last takes precedence.

The major benefits to be achieved from including this contractual issue in the documents of the maintenance contract, is to overcome the interpretation of any topics in the contract quite differently in two or more documents. By indicating the order of importance of the contract documents, bidders will be fully aware of the required work to be accomplished within the contract conditions and terms.

This contractual issue of contract document contradiction was fully covered in the documents of the following maintenance contract references (10, 11, 16, 22, 32-34, 38-40).

And, it was only partially covered in the documents of two maintenance contract references, namely maintenance contract number two (2) and fifteen (15).

Finally, this contractual issue was not included in the documents of the remaining maintenance contract references.

7. Disqualified Proposal:

These are a set of requirements and rules to be followed by all prospective bidders to avoid bid disqualification. The bids are to be considered to be unsuccessful in the following circumstances:

- If the bidder's commercial proposal does not match his financial capability.
- Any violation of contract Conditions, Specifications and Terms will automatically be a cause for disqualification.

The major advantages to be achieved from considering this contractual issue in the maintenance contract, is to ensure bidders full compliance with contract regulations of bid preparations. Secondly, all bidders will be familiarized with client conflict of interest provisions which are included in every contract.

An examination of the latest government maintenance contracts revealed that this contractual issue was fully covered in the documents of the following maintenance contract references (17, 18, 22, 34).

And, it was only partially covered in the second maintenance contract reference only.

Finally, this contractual issue was not included in the documents of the remaining maintenance contract references.

8. Qualifications of Prospective Bidders:

Ministries and all governmental agencies can only enter into a contract for work to be carried out in the Kingdom of Saudi Arabia with a contractor who is commercially or professionally registered or who has been Ministerially licensed under the laws of Saudi Arabia.

All bidders who have not previously done business with any Ministry are required to register with the contracting department of the Ministry, as a condition of being considered for work. Bidders may be required to furnish information sufficient to enable the Ministry to assess their capability for performing the work. An example of some of the information which may be requested are:

- Current annual financial statements and related financial information as required by the Ministry's Treasurer's Department.
- Technical information, such as previous experience in performing similar or comparable work.

The benefits to be achieved from considering this contractual issue in the maintenance contract is to ensure that the maintenance work will be executed by the most qualified contractor who has the technical experience and the necessary supporting facilities to perform first class maintenance work.

A detailed investigation of the latest government maintenance contracts indicated, that this contractual issue of Qualification of Prospective Bidders was fully covered in the documents of the following maintenance contract references (2, 5, 7, 9-11, 17, 18, 22, 28, 34).

And, it was not partially covered in the documents of all maintenance contract references.

Finally, this contractual issue was not included in the documents of the remaining maintenance contract references.

9. List of all personnel and supervisor's to perform the work:

The contractor warrants, that it shall have sufficient, competent and fully qualified supervisor's and other personnel to perform the work within the time frame required by the contract. All contractor personnel performing the work shall be physically fit and free from communicable diseases and shall submit to periodic medical examinations as deemed necessary by a Ministry representative.

The major advantages to be gained from including this contractual issue in the maintenance contract is to ensure that contractor personnel comply with the Ministry's required qualifications and designated numbers.

This contractual issue was fully covered in the documents of the following maintenance contract references (2-9, 13, 14, 17-19, 22, 28-30, 32-34, 36, 38, 40).

And, it was only partially covered in the documents of the two maintenance contract references, namely maintenance contract number fifteen (15) and sixteen (16).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

10. List of all equipment to be used in the contract:

All contractor's equipment shall be in good operating condition and suitable for the safe and efficient performance of the work. All such equipment shall be subject to inspection and approval from time to time by a Ministry supervising team. Any such equipment which is rejected as not conforming with the contract conditions, shall be promptly removed from the work site by the contractor and replaced with equipment that is acceptable to the Ministry without additional cost and without delay in the completion of the work.

The major benefits to be achieved from including this contractual issue in the maintenance contract, is to ensure that the contractor provides to the Ministry, the most efficient and practical equipment which fulfills the contract equipment conditions. Also, to ensure that each piece of equipment is registered with the appropriate agencies of the Saudi Arabian Government and any agency of the Ministry which requires registration.

A detailed investigation of the latest governmental maintenance contracts indicate that this contractual issue was fully covered in the documents of the following maintenance contract references (6-9, 11, 13, 14, 17-19, 28, 34).

And, it was only partially covered in the documents of the following maintenance contract references (2, 4, 5, 15, 16, 22).

Finally, this contractual issue was not included in the documents of the remaining maintenance contract references.

11. List of all suppliers and sub-contractors:

The contractor's must furnish the Ministry with a list of all suppliers and sub-contractors to be involved directly in the performance of the work. The contractor shall warrant, that all the work of his suppliers or sub-contractors must be performed with the highest degree of diligence and dispatch, in a safe manner and in strict accordance with specifications set forth in the contract.

The main advantages to be achieved from including this contractual issue in the maintenance contract is to inform the Ministry to all suppliers and sub-contractor qualifications, experiences and the amount of work that the contractor has assigned to them. The Ministry shall have the right to require from the contractor the removal of any supplier or sub-contractor and request the contractor to promptly replace them with others suitable to the Ministry.

The latest governmental maintenance contracts indicated that this contractual issue was fully covered in the documents of the following maintenance contract references (2, 11, 13, 14, 17-19, 28, 34).

And, it was only partially covered in the documents of the following maintenance contract references (3, 7, 15, 16, 22).

Finally, this contractual issue was not included in the documents of the remaining maintenance contract references.

12. List of Alternative Materials and Equipment:

The contractor shall provide all materials and equipment necessary to perform the work defined in the contract as set forth in the contract attachment. An Alternative Materials and Equipment List must be submitted to the Ministry in case the contract designated materials or equipment are not available on the market.

The most important advantages to be achieved from including this contractual issue in the maintenance contract, is to ensure that the Ministry is fully advised of all alternative materials and equipment to be used prior to their placement on the site. Secondly, the contractor can submit a list of all al-

ternative materials prior to the starting day of the contract, to avoid work interruption and to ensure the continuity of work.

The latest governmental maintenance contracts indicated that this contractual issue was fully covered in the documents of the following maintenance contract references (3,11, 13, 14, 17-19, 28, 34).

And, it was only partially covered in the documents of the following maintenance contract references (2, 15, 16, 22).

Finally, this contractual issue was not included in the documents of the remaining maintenance contract references.

13. Preliminary Guarantee (Bid Bonds):

Based upon financial information which the bidder submits to the Ministry, the Ministry shall determine whether the successful bidder must provide a Preliminary Guarantee of performance in connection with the contract. If the contractor is required to provide a guarantee, it must be in a form acceptable to the Ministry and must be presented to the Ministry prior to the execution of the contract. The Ministry will not enter into any contract with a contractor that is required to provide a guarantee, but fails to do so. Once the Ministry has determined a guarantee is necessary, it will not waive the requirement.

The benefits to be achieved from considering this contractual issue in the maintenance contract is to ensure the contractor's full commitment to accomplish the required work of the contract. Secondly, the Ministry can deduct any amount of money from the preliminary guarantee in case of the contractor's failure to comply with the conditions of the contract.

The latest governmental maintenance contracts indicated, that this contractual issue was fully covered in the documents of the following maintenance contract references (2-8, 10-14, 17-19, 28-30, 34-38, 40).

And, it was partially covered in the documents of the following maintenance contract references (15, 16, 22, 33).

Finally, this contractual issue was not included in the documents of the remaining maintenance contract references.

14. Bidder Reservations List:

A contract explanation meeting is normally held to explain the nature and scope of the proposed contract, to ensure that all Bidder Reservations or notices have been answered. If a bidder has questions after the contract explanation meeting, he should submit them in writing as soon as possible to the contract representative assigned to the contract. As appropriate, the contract representative will provide a written copy of the questions and answers to all bidders. The Ministry will also transmit in writing to all bidders any modifications to the bid package approved during the bidding period.

The major advantages to be gained from including this contractual issue in the maintenance contract is to avoid any sort of ambiguities, contract document contradictions and bidder misinterpretation of the conditions and specifications.

The latest governmental contracts indicated that this contractual issue was fully covered in the documents of the following maintenance contract references (2, 10, 11, 13, 14, 16-19, 28, 34).

And, it was partially included in the documents of the twenty two (22) maintenance contract references only.

Finally, this issue was not included in the documents of the remaining contract references.

15. Site visit and other required certificates:

These are a set of certificates which must be submitted by all bidders to the Ministry's Contracting Department. The following are examples of these certificates which might be required by the client:

- an updated financial certificate to demonstrate the contractor's financial status from the previous and current year.
- site visit certificate which must be signed by the site authority to prove that the contractor visited the work site.
- a certificate from the Saudi Arabian Government Directorate of Zakah and Income Tax which certifies that the contractor has submit-

ted his final and temporary Zakah/Tax declaration through the previous year or period.

The main advantages of including this contractual issue in the maintenance contract documents is to ensure that the contractor complies with the conditions of the contract and other governmental agency's requirements.

The latest governmental contracts indicated that this contractual issue was fully covered in the documents of the following maintenance contract references (2, 3, 7, 9, 12-14, 16-19, 28, 34).

And, it was only partially covered in the documents of the following maintenance contract references (15, 22).

Finally, this contractual issue was not included in the documents of the remaining maintenance contract references.

16. Bid Presentation Letter:

It is the bidder's responsibility to clearly address his proposals to the Ministry's Maintenance Department as indicated in the contract documents. Bid Presentation Letters must be addressed to the Ministry as indicated in the contract documents and must also include the bidder's total commercial prices and the bid must remain valid for a minimum period of 120 calendar days after the bid closing date.

The major advantages to be gained from including this contractual issue is, to confine all the bidder's proposals to be valid for a reasonable amount of time for evaluation and a selection process to award the contract to the most qualified bidder. Secondly, to prove the contractor's commitment to perform the work of the contract within the specified period of time.

The latest governmental maintenance contracts indicated that this contractual issue was fully covered in the documents of the following maintenance contract references (1-11, 13, 14, 17-22, 24-28, 34).

And, it was also partially covered in the documents of the fifteenth (15) maintenance contract reference only.

Finally, this contractual issue was not included at all in the documents of the remaining maintenance contract references.

17. Bidder's previous experience in performing similar or comparable work:

All prospective bidder's are required to furnish the Ministry with their previous experience in maintenance and operation or other similar work. Such information and certificates must be signed by the clients to prove his true involvement in the maintenance field.

The major advantages to be achieved from considering this contractual issue in the maintenance contract is to enable the Ministry to assess the bidder's capability and experiences of performing the contract work. Secondly, the Ministry will award the contract to the most qualified contractor to perform the work according to the Specifications and Conditions stated in the contract.

The latest government maintenance contracts revealed, that this contractual issue was fully covered in the documents of the following maintenance contract references (7, 9, 13-22, 24-30, 32- 40).

And, it was not partially covered in the documents of all the maintenance contract references.

Finally, this contractual issue was not included in the documents of the remaining maintenance contract references.

3.2 Second Document: General Conditions:

These are a set of conditions which remain mostly unchanged, regardless of the types of contracts that might be used. It regulates and controls the general requirements, provisions and obligations that the contractor must fulfill during the life span of the contract.

The major benefits to be achieved from including this document and its related subdivisions in the maintenance contract is to support and supplement the specific conditions and scope of work of the contract. In addition, this condition will also enforce the related government procurement laws and regulations which contain articles that govern the procurement process and form the framework of contract administration.

The following are the contractual issues of the Second Document:

1. Definitions:

There are sets of important terminologies that need to be identified with great precision to avoid the bidder's misinterpretation of the actual meaning. An example of the phrases and expressions that need to be defined in the maintenance contract is as follows:

Work - means all the work and services to be performed by the contractor pursuant to the contract.

Amendment - means any written modification of the contract expressly designated as an amendment and signed by both parties.

The major advantages to be achieved from considering this contractual issue in the maintenance contract is to ensure that bidders are fully aware of the basic expression in the contract. This will greatly benefit both parties by reducing the dispute of phrases and expressions interpretation.

The latest governmental maintenance contracts indicated that this contractual issue was fully covered in the documents of the following maintenance contract references (1, 2, 9, 11-14, 22, 24, 25, 34- 40).

And, it was partially covered in the documents of the tenth (10th) maintenance contract reference.

Finally, this contractual issue was not included in the documents of the remaining maintenance contract references.

2. Single and plural utterance:

All the expressions which are described in the contract in a single form must be also understood in their plural form and vice versa.

The benefits to be achieved from considering this contractual issue in the maintenance contract is to prevent an unscrupulous contractor from any attempt to play with words and expressions to reduce the contract's scope of work.

The latest governmental maintenance contracts indicated that this contractual issue was fully covered in the documents of the following maintenance contracts references (2, 9-12, 22, 24, 25, 34, 36-38).

And, it was not partially covered in the documents of all maintenance contract references.

Finally, this contractual issue was not included in the documents of the remaining maintenance contract references.

3. Major and marginal titles:

In all maintenance contracts, major and marginal titles shall not be considered by the bidders as a part of the contract's documents and they will not be used to interpret any contract Conditions and Specifications.

This contractual issue must be considered in all maintenance contracts, because, it will protect the governmental agencies in case of a title expression dispute with the contractor. The contractor is required to refer to the content stated under each major and marginal title in order to obtain the precise meaning of the titles.

The latest governmental maintenance contracts revealed that this contractual issue was fully covered in the documents of the following maintenance contracts references (2, 10-12, 22, 24, 25, 36-39).

And, it was not partially covered in the documents of all maintenance contract references.

Finally, this contractual issue was not included in the documents of the remaining maintenance contract references.

4. Documents interpret each other:

All documents of the contract should be in agreement. It should be emphasized that most of the Ministries do not consider all documents of the contract of equal value. By general rule, that which is done last, takes precedence.

The major advantages to be achieved from including this contractual issue in the maintenance contract is to demonstrate to the contractor, that the contract document is considered to be one unit. In case of contradiction

between the documents, the preferences of interpretation will depend on the order of importance of each document.

The latest governmental maintenance contracts revealed that this contractual issue was fully covered in the documents of the following maintenance contract references (5, 10-27, 29-38, 40).

And, it was partially covered in the documents of the following maintenance contract references (2, 4, 28).

Finally, this contractual issue was not included in the documents of the remaining maintenance contract references.

5. Site visit inspection:

Where applicable, arrangements will be made, normally by the client, for bidders to visit the work site. Bidders are expected to visit the work site, unless otherwise advised and will be given sufficient time to survey the work site in order to satisfy themselves as to all general and local conditions affecting the bid.

The most important benefit to be achieved from including this contractual issue in the maintenance contract is to ensure that all bidders are fully addressed to site location, existing buildings and facilities. This will help the bidders to understand the scope of work, its requirements and specifications and to answer their questions prior to their proposal submission..

A detailed investigation into the latest governmental contract reveals that this contractual issue was fully covered in the documents of the following maintenance contract references (2, 5, 10-24, 27, 29-39).

And, it was partially covered in the documents of the following maintenance contract references (7, 26, 28).

Finally, this contractual issue was not included in the documents of the remaining maintenance contract references.

6. Advance and progress payments:

If the contract provides for advances to be made to the contractor for mobilization payments, the contractor will be required to provide a bank guarantee for advances of the amount of advance payments. As full and complete compensation for contractor's performance of the required work in accordance with the terms and conditions of this contract, the Ministry shall pay the contractor a contract price, based on his actual progress of the required work on the site.

The major advantages to be gained from including this contractual issue in the maintenance contract is to encourage the contractor to start the work and to fulfill the Ministry's obligations toward contract payments. Secondly, the contractor will be addressed to all regulations and rules that control the contract payments.

The latest governmental maintenance contracts indicated that this contractual issue was fully covered in the documents of the following maintenance contract references (2, 3, 6-9, 11-18, 20-25, 27, 29-34, 38, 40).

And, it was partially covered in the documents of the following maintenance contract references (4, 5, 10, 26, 28).

Finally, this contractual issue of advance progress payments was not included in the documents of the remaining maintenance contract references.

7. Final Guarantee:

After awarding the contract to the contractor, the Ministry will require the contractor to submit a Final Guarantee, not less than 5% of the total contract value, and it must remain valid during the contract duration and for three (3) months thereafter. Such a guarantee, which must normally be provided by a Saudi bank and in a form acceptable to the Ministry, must be provided to the Ministry before any advance payment for mobilization will be made.

The major benefits to be achieved from including this contractual issue in the maintenance contract is to ensure contractor seriousness and commitment to perform the required work of the contract.

The latest governmental maintenance contracts indicated that this contractual issue of final guarantee was fully covered in the documents of the following maintenance contract references (1-9, 11-18, 20-22, 24, 25, 27, 29-34, 36-40).

And, it was partially covered in the documents of the following maintenance contract references (12, 19, 26, 28).

Finally, this contractual issue was not included in the documents of the remaining maintenance contract references.

8. Pre-starting conference:

A pre-starting conference will be held between the contractor and the Ministry representatives to discuss the contractor's proposed progress plan to perform the required work of the contract.

The major benefit to be accomplished from including this contractual issue of a pre-starting conference is to inform Ministry supervisors to the manner in which the contractor is going to perform the work and the implementation dates for each activity.

This latest governmental maintenance contracts revealed that this contractual issue was fully covered in the documents of the following maintenance contract references (13, 22, 24, 25, 34, 36-39).

And, it was partially covered in the documents of the second maintenance contract reference only.

Finally, this contractual issue was not included in the documents of the remaining maintenance contract references.

9. Site Hand-over:

Once the contract is awarded to the successful bidder, the contractor is required to visit the Ministry Contracting Department to determine a specific date for site hand-over. The site will be handed-over to the contractor officially in a written protocol that must be signed by the Ministry and the

contractor's representatives. This date will be considered as the starting date of the contract.

The following are the benefits to be achieved from including this contractual issue in the maintenance contract:

- To push forward the contractor to start the work.
- To generate an official site hand-over protocol which will indicate the contract starting date.
- To prove the contractor's acceptance of receiving the site and ensures there are no more obstacles to prevent the contractor from starting the work.

The latest governmental maintenance contracts indicated that this contractual issue was fully covered in the documents of the following maintenance contract references (8, 9, 11, 17, 18, 20, 22, 23, 25, 36-38, 40).

And, it was partially covered in the documents of the following maintenance contract references (2-7, 13, 15, 16, 19, 21, 24).

Finally, this contractual issue was not included in the documents of the remaining maintenance contract references.

10. Site utilities usage:

The Ministry will allow the contractor and his sub-contractor to use the existing site utilities such as water, electricity and others. The contractor must abide by all instructions and rules related to the use of the existing utilities.

The most important advantage to be gained from including this contractual issue in the maintenance contract is to prevent the contractor from misusing the existing utilities at the site and to develop standardized rules and regulations to govern the consumption of the local utilities.

The latest governmental maintenance contracts indicated that this contractual issue was fully covered in the documents of the following maintenance contract references (22, 23, 34-39).

And, it was partially covered in the documents of the following maintenance contract references (2, 10, 24).

Finally, this contractual issues was not included in the documents of remaining maintenance contracts references.

11. Contractor Manager or his representatives authority:

The Contractor Manager means a party, or parties, duly authorized by the contractor to act on his behalf and with whom the Ministry may consult at all reasonable times, whose instructions, requests, and decisions issued or made, as provided in the contract shall be binding to the contractor. He shall administer the overall activities of the contractor's personnel and ensure that contract terms and conditions are thoroughly complied with which shall include, but not be limited to, the stated contractor obligations and responsibilities.

The major benefits to be achieved from including this contractual issue in the maintenance contract is to ensure that the contractor designates a qualified representative at the site, with full authority to transact business for the contractor and who shall notify the contractor about the progress of the work and Ministry requirements.

The latest governmental maintenance contracts indicated that this contractual issue of contractor manager was fully covered in the documents of the following maintenance contract references (7, 9, 12-14, 23, 24, 31- 34, 40).

And, it was partially covered in the documents of the following maintenance contract references (2, 3, 10, 15, 26, 38).

Finally, this contractual issue was not included in the documents of the remaining maintenance contract references.

12. The contractor's communication with the owner:

All kinds of contractor communication's related to the contract interpretation must be addressed directly to the concerned Ministry Departments according to the Ministry representative's instructions.

The main advantages to be achieved from considering this contractual issue in the maintenance contract is to direct the contractor to the proper channels of communication with the Ministry and to ensure there is no other party involved in the management and supervision of the contract.

The latest governmental maintenance contracts show that this contractual issue was fully covered in the documents of the following maintenance contract references (5, 7, 39).

And, it was partially covered in the documents of the following maintenance contract references (2, 38).

Finally, this contractual issue of the contractor's communication with the owner, was not included in the documents of the remaining maintenance contract references.

13. Other contracts at the site:

The Ministry may assign other contractors to work at the site of the existing contract. All contractors must cooperate with each other under the guidance of the Ministry supervisor to ensure that all contracts are performed according to the conditions and specifications and there is no contradictions in the flow of all the contractors work.

The major benefit to be achieved from considering this contractual issue in the maintenance contract is to ensure that all contractors at the site work as a team to achieve the most efficient results of all contract work.

The latest governmental maintenance contracts revealed that this contractual issue was fully covered in the documents of the forty (40) maintenance contract reference only.

And, it was partially covered in the documents of the following maintenance contract references (2, 8, 38).

Finally, this contractual issue was not included in the document of the remaining maintenance contract influences.

14. Supervision, personnel and language:

All the work of the maintenance contract must be supervised by the contractor's representative at the site. The contractor's responsibility is to provide supervisory personnel that have a good command of verbal and written Arabic and shall be able to communicate effectively with the Ministry and the contractor's personnel, and the language common to the personnel he is supervising. All contractor personnel assigned to the governmental maintenance contracts shall meet or exceed the required qualifications stated for the various types of personnel or craftsmen that might be needed.

The major advantages to be achieved from including this contractual issue in the maintenance contract is to ensure contractor compliance with the required personnel qualifications and that the contractor's supervisor shall be able to communicate effectively with the Ministry supervisors and his own personnel.

The latest maintenance contracts indicated that this contractual issue was fully covered in the documents of the following maintenance contract references (1, 5-7, 9-14, 17, 22, 24, 25, 34-39).

And, it was partially covered in the documents of the following maintenance contract references (8, 26).

Finally, this contractual issue was not included in the documents of the remaining maintenance contract references.

15. Compliance with Kingdom Laws, Rules, Customs and Traditions:

The contractor shall be fully responsible for conducting all government related activities within Saudi Arabia on its own behalf and for its personnel. Government related activities shall include, without limitation, all contact with the Saudi Arabian Government, its agencies and officials, in matters arising out of, or connected with, the contractor's performance of this Contract. If requested by the contractor, the Ministry may provide general guidance to assist the contractor in the conduct of such government related activities; provided that the Ministry shall not be liable for any loss the contractor may claim or award as a result of providing such guidance to the contractor. The contractor shall hold the Ministry harmless from any loss,

claim, or award resulting from the contractor's failure to perform its obligations under this paragraph.

The most important benefit to be gained from considering this contractual issue in the maintenance contract is to ensure the contractor's full compliance with the existing governmental laws related to all aspects of the contract, such as labor, materials, equipment, customs and others.

The latest governmental maintenance contract revealed that this contractual issue was fully covered in the documents of the following maintenance contracts references (1, 2, 4, 5, 8-10, 13, 20, 21, 40).

And, it was partially covered in the documents of the following maintenance contract of references (14-19, 38).

Finally, this contractual issue was not included in the documents of the remaining maintenance contract references.

16. Responsibilities, Permits and Licenses:

The contractor shall obtain all work permits and licenses required by the local authorities in the Kingdom of Saudi Arabia for the performance of the work. The following are examples of the required permits and licenses:

- To obtain the required personnel passports, visas and permits necessary to enter and exit Saudi Arabia.
- To obtain the required safety and work regulation permits.
- To obtain all licenses and customs clearances for importation of the contractor's equipment.
- The contractor shall obtain a license for using explosive material and shall comply with the general rules and requirements for handling, and use of explosives issued by the Ministry of Interior.

The main advantage of incorporating this contractual issue in the maintenance contract is to ensure the contractor's satisfaction of the Ministry's rules and requirements related to the required permits and licenses.

The latest governmental maintenance contracts indicated that this contractual issue was fully covered in the documents of the following maintenance contract references (13, 34).

And, it was partially covered in the documents of the following maintenance contract references (26, 38, 39).

Finally, this contractual issue was not included in the documents of the remaining maintenance contract references.

17. Taxes and dues:

The contractor shall be fully liable for and pay, without reimbursement from the Ministry, any or all taxes, dues or increases in the foregoing, imposed on the contractor as a result of the contractor's performance of the work, or in connection with income earned by the contractor under the maintenance contract.

The major advantage to be gained from considering this contractual issue in the maintenance contract is to be sure that the contractor fully performs his obligations towards the stated taxes and dues required by the local authority in the Kingdom of Saudi Arabia.

The latest governmental maintenance contracts indicated that this contractual issue was fully covered in the documents of the following maintenance contract references (2, 4, 7, 10-13, 16, 23, 24, 27).

And, it was partially covered in the documents of the following maintenance contract references (9, 14, 15, 17-19, 38, 40).

Finally, this contractual issue was not included in the documents of the remaining maintenance contract references.

18. Contractor Vehicle Identification:

All vehicles supplied by the contractor shall be painted a single, uniformed color. No commercial markings or decorations shall be displayed, except for the contractor's name and particulars which shall be displayed on the driver and front passenger doors and at the rear of the vehicle. The contractor's

vehicles shall be kept in a clean and well-maintained condition at all times, to the satisfaction of the company representative.

The advantages to be gained from incorporating this contractual issue in the maintenance contract is to ensure that the contractor's vehicles are in good operating condition at all times, at no additional cost to the Ministry.

The latest maintenance contract reveals that this contractual issue was fully covered in the documents of the thirty eight (38) maintenance contract references only.

And, it was partially covered in the documents of the following maintenance contract references (3, 40).

Finally, this contractual issue was not included in the documents of the remaining maintenance contract references.

19. Sub-Contracting Contracts:

The contractor shall perform not less than fifty percent (50%) of the total work of the contract. By general rule, a foreign contractor shall assign at least thirty percent (30%) of the total work of the contract to Saudi sub-contractors. He must get the required approval from the Ministry to the involvement of all sub-contractors. The contractor shall submit the following information relating to proposed sub-contractors:

- Name and full address of the sub-contractor.
- The required work to be performed by the sub-contractors.
- A copy of the agreement protocol between the contractor and his sub-contractors.
- Sub-contractor's previous experiences and qualifications.

The major benefit to be achieved from considering this contractual issue in the maintenance contract is to ensure that all other parties involved in the implementation of the work are fully investigated prior to their approval to conduct the work.

The latest governmental maintenance contract indicated that the contractual issue was fully covered in the documents of the following maintenance contract references (1, 2, 9-22, 24, 31, 33, 34, 36, 38).

And, it was partially covered in the documents of the twenty eight (28) maintenance contract references only.

Finally, this contractual issue was not covered in the documents of the remaining maintenance contract references.

20. Contract Scope of Work:

The contractor shall, in accordance with, and subject to, the terms and conditions of the maintenance contract:

- perform the work described in the contract, in accordance with specifications and standards set forth or referenced therein.
- provide all labor, equipment, vehicles, tools and other items to perform the work.
- appoint one or more contractor representatives for the duration of the work.

The benefit of including this contractual issue in the maintenance contract is to demonstrate, in general terms, the contractor's general obligations that must be performed under the contract terms and conditions.

The latest maintenance contract indicated that this contractual issue was fully covered in the documents of the following maintenance contract references (9-21, 24, 26, 29-38).

And, its was partially covered in the documents of the following maintenance contracts references (1, 3, 4, 6, 27, 28).

Finally, this contractual issue of contract scope of work was not included in the documents of the remaining maintenance contract references.

21. Rehabilitation work:

During the duration of the contract, the Ministry may require the contractor to perform rehabilitation work of some kind. The Ministry shall supply the contractor, free of charge, all the needed specifications and drawings to be followed during the implementation of the requested work of rehabilitation.

The most important benefit to be achieved from considering this contractual issue in the maintenance contract is to inform the contractor that, any newly requested work by the Ministry shall be performed as part of the contract and the Ministry shall compensate the contractor for all the expenses.

The latest governmental maintenance contract indicated that this contractual issue was fully covered in the documents of the second (2nd) and sixth (6th) maintenance contract references.

And, it was not partially covered in the documents of the maintenance contract references.

Finally, this issue of rehabilitation work was not included in the documents of the remaining maintenance contract references.

22. Work Approval:

The Ministry shall be entitled to have its representatives present at all locations where the contractor is performing the work, and to review and inspect all aspects of the contractor's performance. Failure to get the necessary Ministry approval for the work to be performed, may result in partial or total removal of the work.

The benefit to be achieved from considering this contractual issue in the maintenance contract is to ensure that Ministry supervisor's instructions are fully respected by the contractor during the contract period.

A detailed investigation of the latest governmental maintenance contract reveals that this contractual issue was fully covered in the documents of the following maintenance contract references (2-10, 22).

And, it was not partially covered in the documents of the maintenance contract references.

Finally, this contractual issue of work approval was not included in the documents of the remaining maintenance contract references.

23. Work Progress, Penalty and Delay:

As a full and complete compensation for the contractor's performance of the contract work obligations, and in accordance with terms and conditions of this contract; the Ministry shall pay the contractor the agreed contract prices according to his actual work progress at the site. The Ministry may deduct, from amounts which are payable to the contractor under this contract, any amounts which are payable to the Ministry by the contractor under the maintenance contract or any other contract between them.

The advantages to be achieved from considering this contractual issue in the maintenance contract, is to demonstrate to the contractor that his progress payments are subject to deduction if he fails to comply with the contract conditions and specifications or any other governmental contracts requirements.

This contractual issue of work progress was fully covered in the documents of the following maintenance contract references (1, 11-22).

And, it was partially covered in the documents of the following maintenance contract references (4, 5, 9, 10).

Finally, this contractual issue was not included in the documents of remaining maintenance contract references.

24. Owner Supervisors:

The Ministry will assign one or more representatives to supervise the work to be performed by the contractor. The Ministry representatives have no authority to change or modify the terms and conditions of the contract. The representatives will review and inspect all aspects of the contractor's performance of the work, including the contractor supplied materials, tools and equipment. Nevertheless, the Ministry can exercise the rights given under this paragraph and shall in no way relieve the contractor of any of its obligations under this contract.

The benefit to be achieved from considering this contractual issue in the maintenance contract is to be defined very clearly to the contractor the authority and responsibilities of designated Ministry supervisors and their limitations.

A detailed investigation into the latest maintenance contract reveals that this contractual issue was fully covered in the documents of the following maintenance contract references (2-11, 13-20, 24, 29, 30, 34-38).

And, it was partially covered in the documents of the following maintenance contract references (21-23, 25, 26).

Finally, this issue of owner supervisor was not included in the documents of the remaining maintenance contract references.

25. Incidents, Precautions and Compliance with Safety Measures:

The contractor shall comply with the applicable Saudi Arabian Government and Ministry safety regulations and requirements. The contractor shall be responsible for safety within his area of operations. Safety performance is one of the major categories on the periodic contractor performance appraisal. The contractor shall demonstrate satisfactory performance in safety consciousness.

The major benefit to be achieved from considering this contractual issue in the maintenance contract is to ensure that the contractor's personnel and supervisor are provided with, and to utilize personal protection equipment, necessary to protect them from work hazards they may encounter during their daily work.

The latest governmental maintenance contract indicates that this contractual issue was not fully covered in the documents of the maintenance contract references.

And, it was partially covered in the documents of the following maintenance contract references (2-4, 10).

Finally, the issue of safety measures was not included in the documents of the remaining maintenance contract references.

26. The Provision of the Required Equipment Materials and Other Installations:

Except where the contract specifically states that the Ministry shall provide them, the contractor shall provide all materials, equipment and other installations necessary to perform the work defined in the contract.

The major benefit to be achieved from considering this contractual issue in the maintenance contract is to state very precisely, to the contractor, the required quantity and quality of equipment, materials and other installations to perform the work of the contract.

A detailed investigation of the latest maintenance contract indicates that the contractual issue was fully covered in documents of the following maintenance contract references (5-8, 12, 20, 21, 23-26).

And, it was partially covered in the documents of the following maintenance contract references (1, 3, 4, 10, 14-19).

Finally, this contractual issue was not included in the documents of the remaining maintenance contracts.

27. Materials and Personnel:

Except, as may be specifically provided otherwise in the contract schedules, the contractor shall supply all materials required for the performance of the contract. All materials supplied, shall be in accordance with, and subject to, the terms and conditions of the contract. The contractor warrants that they shall have sufficient and fully qualified supervisory staff and other personnel to perform the work.

The benefits of incorporating this contractual issue in the maintenance contract is to ensure the contractor's personnel qualifications and material conditions are acceptable to the requirements stated in the contract.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the following maintenance contract references (1-27, 29-31, 33-40).

And, it was partially covered in the documents of the twenty eight (28) maintenance contract references only.

Finally, the issue of materials and personnel was not included in the documents of the remaining maintenance contract references.

28. Contract Duration:

The contractor shall, in accordance with, and subject to, the terms and conditions of this contract, to perform the work described in the contract within the specified period of time. Failure of the contractor to abide by the contract duration may result in partial or total payment penalty.

The major benefits to be achieved from incorporating this contractual issue in the maintenance contract is to ensure the contractor fully respects the allocated time to perform the required work of the contract and to avoid owner disturbance, resulting from contractor delay in the contract work.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the following maintenance contract references (1-31, 33-40).

And, it was not partially covered in the documents of the maintenance contract references.

Finally, this issue was not included in the documents of the remaining maintenance contract references.

29. Termination at Owner Convenience:

The Ministry may, at any time and at its sole convenience, terminate the contract or any part of the work by giving written notice to the contractor, specifying the extent and effective date of the termination (termination date). The contractor shall immediately stop performance of the work, unless otherwise directed by Ministry, and demobilize within a specific period of time. The Ministry shall pay the contractor all amounts properly due and payable for terminated work up to the termination date.

The advantages to be gained from incorporating this contractual issue in the maintenance contract is to ensure that the contractor accepts in full the final settlement entitlements of any kind arising from any termination under this contractual issue compensation (termination compensation) for all reasonable, auditable and verifiable costs.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the following maintenance contract references (1, 4, 8, 11, 13-16, 18, 20, 22-25, 32, 34-40).

And, it was partially covered in the documents of the following maintenance contract references (2, 5, 9, 10, 27, 28, 33).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

30. Suspension of work:

The Ministry may, at any time, with or without cause, suspend performance of the work, or any part, by giving the contractor prior notice specifying the work to be suspended and the effective date of such suspension. The contractor shall cease all activity on the suspended work on the effective date of suspension, but shall continue performing any unsuspended work.

The advantages to be gained from considering this contractual issue in the maintenance contract is to give the Ministry the freedom to suspend any amount of work which is considered to be non-beneficial to the Ministry during the contract period. In addition, the contractor shall take all action necessary, to maintain and safeguard Ministry material and equipment related to the suspended work.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the following maintenance contracts reference (8, 9, 11, 15, 16, 18, 20, 22-25, 32, 34, 36-40).

And, it was partially covered in the documents of the following maintenance contract references (4, 10, 13, 14, 27, 28, 33).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

31. Changes and Contract Modification:

The Ministry shall have the right to increase or decrease the required contract work to be performed by the contractor under this contract, as specified in the contract schedules. Unless, by mutual agreement the parties

agree to a shorter notice period, the Ministry shall exercise this right by giving the contractor a specified period of time, with prior written notice, of the increase or decrease to be made.

The main objectives to be achieved from considering this contractual issue in a maintenance contract is to incorporate any new work that might be needed by the Ministry which was not originally included in the documents of the contract. Secondly, the Ministry can determine that the percentage of any new work shall not exceed ten percent (10%) of the total amount of work and, the Ministry can only deduct twenty percent (20%) of the total contract work.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the following maintenance contract references (6, 8, 10, 11, 15, 16, 18-20, 22-25, 31, 34, 36-40).

And, it was partially covered in the documents of the following maintenance contract references (1, 2, 4, 9, 13, 14, 27, 28, 33).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

32. Obligations upon Suspension or Termination:

The contractor shall minimize all costs to the Ministry resulting from such termination or suspension. Unless otherwise directed in writing by the Ministry, the contractor shall not enter into any further contracts or obligations, and must immediately make every reasonable effort to terminate or suspend contracts or other obligations, other than those required to complete the portion of the work not suspended or terminated.

The main benefits to be gained from considering this contractual issue in a maintenance contract is to regulate and control the two parties obligations in case of suspension or termination. The contractor shall take all necessary actions that may be needed, or that the Ministry may direct, for the protection and preservation of work in progress, which is not included in the written notice of suspension or termination.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the following

maintenance contract references (11, 15, 16, 18, 20, 22-25, 32, 34, 36, 37, 39, 40).

And, it was partially covered in the documents of the following maintenance contract references. (2, 4, 9, 10, 27, 28, 33, 38).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

33. Dispute Settlement:

The laws of Saudi Arabia shall control the interpretation and the performance of this contract and any other agreement arising out of, or relating to it, regardless of where this contract shall be entered into or performed. Any dispute, controversy or claim arising out of, or relating to, maintenance contracts or other agreements arising out of, or relating to it, which is not settled by agreement between the parties shall be finally settled in accordance with the Arbitration Regulations, Council of Ministers Decision No. 164, dated 21 Jumada II 1403. The rules for implementation of the Arbitration Regulations are effective as of 10 Shawwal 1405.

The advantages to be gained from including this contractual issue is to specify the governmental offices to be consulted in any dispute, controversy or claim arising out of, or relating to, the contract. Secondly, under this contractual issue, the Ministry will ensure that the contractor will continue to perform the work, and any additional work, which the Ministry may direct the contractor to perform during any dispute settlement.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the following maintenance contract references (3, 8, 11, 13, 16, 21, 22, 24, 25, 27-31, 34, 36, 37, 39, 40).

And, it was partially covered in the documents of the following maintenance contract references (1, 5, 9, 10, 26, 33, 38).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

34. Sham and Swindle:

If the contractor adopts any kind of unacceptable behaviour of swindle or sham, then the Ministry will cancel the contract totally. The contractor has no right to ask for any kind of compensation. In addition, the contractor will be prevented from participation in any governmental Ministries projects and his company name will be included on the Saudi Arabian contractor black-list.

The main advantages to be achieved from considering this contractual issue in the maintenance contract is to ensure that the contractor will not adopt unofficial attitudes to obtain the bid or during the performance of the contract work. Secondly, the contractor will be liable to pay all the related compensations to the Ministry.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the following maintenance contract references (2, 8, 24, 25, 32, 34, 36, 37, 39, 40).

And, it was partially covered in the documents of the following maintenance contract references (9, 33, 38).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

35. Notices:

All notices, authorizations and approvals, pertaining to the maintenance contract shall be in writing. Except as otherwise provided in the contract, all notices between the parties shall be sufficient, when delivered in person or sent by telex, cable, or by certified or registered mail, to the appropriate address.

The most important benefits to be gained from considering this contractual issue in the maintenance contract is to ensure that the two parties designate the appropriate address for the purpose of receiving any notice of referral to arbitration and receiving any further notice and documents during the course of the proceedings, unless and until they have designated in writing another address.

A detailed investigation of the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the following

maintenance contract references (2, 9-12, 14, 21, 24, 25, 32, 34, 36, 37, 39, 40).

And, it was partially covered in the documents of the following maintenance contract references (33, 38).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

36. The Contractor Commission to Obtain the Contract:

The contractor shall not, offer any kind of money, gifts or other forms of commission to any employee of the Ministry, to obtain the bid. The Ministry shall exercise its rights to remove the contractor from the bidder list and he shall pay the Ministry required compensation.

The major advantage to be gained from including this contractual issue in the maintenance contract is to ensure that the contract will be awarded to the most technically qualified bidder whose bid in the Ministry's opinion represents the least cost to the Ministry.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the following maintenance contract references (2, 6-11, 21, 24, 32, 34, 36, 37, 39, 40).

And, it was partially covered in the documents of the following maintenance contract references (33, 38).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

37. Bribe and Similar Attitudes:

The contractor shall not, during the term of this contract, offer any kind of gifts to Ministry personnel to facilitate his contract obligations. Failure to abide by this condition may result in total or partial suspension of the work and the contractor shall comply with related obligations upon suspension.

The benefit of incorporating this contractual issue in the maintenance contract is to make sure that the contract work is performed according to stated

conditions and specifications and Ministry personnel are well protected against an unscrupulous contractor.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the following maintenance contract references (2, 8, 24, 36, 37, 39, 40).

And, it was partially covered in the documents of the following maintenance contract references (10, 34, 38).

Finally, this issue was included in the documents of the remaining maintenance contract references.

38. Site Fossil and Heritage:

All valuable fossils, currency, traditional items and heritage on the site shall be considered under the contract as Ministry property and the contractor shall take all necessary precautions to preserve them.

The main advantage of considering this contractual issue in the maintenance contract is to ensure that the contractor specifically acknowledges its responsibility to report to the Ministry any valuable items found at the site, and he must respond to the Ministry's representative's instructions in this regard.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the document of the following maintenance contract references (2, 24, 36, 37, 39, 40).

And, it was partially covered in the documents of the following maintenance contract references (10, 34, 38).

Finally, this issue was included in the documents of the remaining maintenance contract references.

39. Calendar:

All dates and time schedules of the maintenance contracts shall be based on the local Hejirah calendar (Umm-Al-Qura Calendar). Notices and other proclamations between the two parties shall refer to the same calendar.

The main advantage to be achieved from considering this contractual issue in the maintenance contract is to standardized the time calendar to be used

in the contract to avoid any sort of misunderstanding between the two parties.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the following maintenance contract references (16, 29, 30, 36, 37, 39, 40).

And, it was partially covered in the documents of the following maintenance contract references (2, 10, 24, 34, 38).

Finally, this issue was included in the documents of the remaining maintenance contract references.

40. Working Hours:

This contractual issue determines for the contractor, the allowable time table to perform the work. For example the contractor shall work six days per week, Saturday through Thursday, 2 shifts per day. The first shift shall start from 07:00 to 13:30 hours and the second shift shall start from 14:30 to 23:00 hours.

The main advantages to be gained from incorporating this contractual issue into the maintenance contract is to indicate for the contractor the time table available for him to perform the work. If the contractor attempts to work outside this time schedule, it will be considered as a breaching of contract conditions.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the following maintenance contract references (4, 5, 8, 16-18, 22, 24, 29-31, 34, 36, 37, 39, 40).

And, it was partially covered in the documents of the following maintenance contract references (2, 3, 6, 7, 9-15, 26, 28, 32, 33).

Finally, this issue was included in the documents of the remaining maintenance contract references.

41. Environmental Protection:

The contractor shall, at all times, comply with all applicable Saudi Arabian Environmental Protection Regulations and Ministry site protection rules.

This shall include, but not be limited to, the preservation of the existing and surrounding trees and plants. The contractor shall remove from the site, all unwanted materials resulting from the contractor's performance at the site.

The benefits to be gained from including this contractual issue in the maintenance contract is to ensure the contractor's compliance with the required environmental protection rules. The contractor's failure to abide by these rules may result in total or partial suspension of the contract.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the following maintenance contracts references (2, 10, 36, 37).

And, it was partially covered in the documents of the following maintenance contract references (24, 34, 38).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

42. The Ownership of Invention:

The contractor shall be fully responsible for conducting all government related activities within Saudi Arabia, on it's own behalf and for its personnel. The contractor shall not use any protected ownership, such as, another company's design, materials or equipment, without their approval.

The main benefits to be achieved from considering this contractual issue in the maintenance contract is to hold the contractor responsible for the proper contacts with the private and public Saudi Arabian Government, it's agencies and officials, concerning matters arising out of, or connected with, the contractor's performance of the maintenance contract.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the following maintenance contract references (2, 10, 36-38).

And, it was partially covered in the documents of the twenty fourth (24th) and thirty fourth (34th) maintenance contract references.

Finally, this issue was not included in the documents of the remaining maintenance contract references.

43. Contract Laws:

The laws of Saudi Arabia shall control the interpretations and the performance of this contract and any other agreements arising out of, or relating to it, regardless of where the maintenance contract shall be entered into or performed.

The benefits of including this contractual issue of contract laws in the maintenance contract is to indicate to the contractor that in cases of dispute, claim or controversy arising out of, or relating to this contract or any other agreement arising out of, or relating to, which is not settled by agreement between the parties, shall be finally forwarded to the concerned Governmental offices to resolve the dispute.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the following maintenance contract references (5, 8, 11, 13, 16, 20-25, 29, 36-38).

And, it was partially covered in the documents of the following maintenance contract references (1, 2, 4, 9, 10, 14, 17-19, 26-28, 34).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

44. Operational Location and Storing:

The contractor shall perform the contract work on the designated site assigned by the Ministry and no other work shall be performed outside the operational site. All other governmental rules of transportations and communications shall be fully respected to avoid work interference.

The benefits to be achieved, from considering this contractual issue in the maintenance contract is to force the contractor to abide by the related governmental rules of transportation and communication and to restrict his work in the designated operational site only.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the following maintenance contract references (24, 25, 36-38).

And, it was partially covered in the documents of the following maintenance contract references (2, 34).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

45. The Contractor Equipment, Supplies and Tools:

The contractor shall ensure that all equipment, supplies and tools provided by him are of the best quality, with proper safeguards and are suitable for the intended use. All equipment, supplies and tools shall be free from defects and maintained in good condition. The Ministry will reject any submittal which is found to be defective.

The benefits of including this contractual issue in the maintenance contract is to ensure that the contractor's equipment and tools is of Ministry approved types and maintained in good condition.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the following maintenance contract references (6-8, 13-16, 20-24, 36-38).

And, it was partially covered in the documents of the following maintenance contract references (2, 3, 5, 10, 12, 17-19, 34).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

46. The Use of Local Transportation and Loading System:

The contractor is required to use Saudi Arabian Airlines to transport his personnel from, and into the Kingdom of Saudi Arabia according to the Council of Ministers decision No. 199 dated 6th Shaban 1405 and the Ministry of Finance and National Economy Circular No. 1712386, dated 11 Shaban 1405. The contractor is required to use Saudi Naval transportation systems to transport his materials and equipment to perform the work according to Royal Circular No. 1148 dated 25 Rabia I 1405 and Ministry of Finance and National Economy Circular No. 881 dated 28 Jumada II 1405.

The benefits to be achieved from considering this contractual issue in the maintenance contract is to enforce the Ministry of Council rules related to the maintenance contract and to ensure the contractor's full compliance to these rules.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the following maintenance contract references (5, 8-13, 15-18, 20, 24, 29, 30, 33, 34, 36-38, 40).

And, it was partially covered in the documents of the following maintenance contract references (2, 4, 6, 7, 14, 19, 21-23, 28).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

47. The Use of Local Insurance, Banking, Real Estate and Catering Services:

Under all maintenance contracts, the contractor shall perform the following activities by a local Saudi agency:

- Personnel and Products Transportation System.
- Banking Services.
- Insurance Services.
- Real Estate Service.

The main benefits to be achieved from considering this contractual issue in the maintenance contract is to support the local agencies in such a way that they have preferences to perform the work.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the following maintenance contract references (5, 8-13, 15-18, 20, 24, 29, 30, 33, 34, 36-38, 40).

And, it was partially covered in the documents of the following maintenance contract references (2, 4, 6, 7, 14, 19, 21-23, 28).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

48. Identification Tags:

The contractor shall provide all its personnel with identification tags bearing their names, written both in Arabic and English. The identification tag must be worn by each personnel in such a manner that it is prominently displayed and visible at all times. Wearing ID badges does not relieve the contractor's personnel from carrying ID cards.

The benefits to be achieved from incorporating this contractual issue of identification tags in the maintenance contract is to ensure that the contractor only employs officially approved personnel to perform the work.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the following maintenance contract references (2, 11, 23, 24, 34, 36-38).

And, it was partially covered in the documents of the following maintenance contract references (5, 6, 8, 10, 17, 18, 20, 22).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

49. Accommodations of the Contractor's Personnel:

The contractor's food preparation and personnel accommodation facilities shall be inspected periodically by the Ministry of Preventive Medicine Division/ Environmental Health Section, Community Services Proponent or Auditing Team. The contractor shall conform to all requirements, instructions, recommendations and standards prescribed by the above stated Departments.

The benefits to be achieved from considering this contractual issue in the maintenance contract is to ensure that the contractor's personnel accommodations are in good condition to avoid any sort of communicable disease that will directly affect the Ministry Supervising Team.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the following maintenance contract references (2, 10, 15, 16, 24, 29, 34, 39, 40).

And, it was partially covered in the documents of the following maintenance contract references (5, 7, 8, 19, 28, 38).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

50. Site Office Requirement:

The contractor's representative for the maintenance contract shall be the Manager, Central Community Service Department at the site of the work. The office shall be furnished by the contractor with the necessary items stated in the contract in order to perform the required administrative work inside the office.

The main benefits that will be achieved from considering this contractual issue in the maintenance contract is to ensure that the contractor's Site Office is well prepared to facilitate Ministry and contractor work at the site.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the following maintenance contract references (1, 2, 16, 22, 24, 34).

And, it was partially covered in the documents of the following maintenance contract references (10, 14, 19).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

51. Advance Payment:

This is a standardized form to be completed by all bidders, as a basic requirement for the contractor bid approval in the bidding selections.

The benefits to be achieved from considering this contractual issue and the remaining issues in the maintenance contract is to standardized the required certificates to be submitted by the contractor to satisfy the conditions and requirements of the contracts.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the following maintenance contract references (2, 24, 34).

And, it was not partially covered in the documents of the maintenance contract references.

Finally, this issue was not included in the documents of the remaining maintenance contract references.

52. Final Guarantee:

This is a standardized form to be completed by all bidders as a basic requirement for the contractor bid approval, in the bidding stage.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the following maintenance contract references (2, 24, 34, 39).

And, it was not partially covered in the documents of the maintenance contract references.

Finally, this issue was not included in the documents of the remaining maintenance contract references.

53. Progress Certificate:

This is a standardized form to be submitted, by the contractor, before the tenth day of each month during the progress of the work. The contractor shall invoice the Ministry for work completed during the preceding month and was not included on previous invoices.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the following maintenance contract references (24, 34, 40).

And, it was partially covered in the documents of the following maintenance contract references (2, 20).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

54. Periodical Invoicing Payment:

This is a standardized form, prepared by the Ministry, to compensate the contractor for all work performed by him in a specific period of time. This form will be addressed to the Accounting Department, for the processing of the contractor's payments. The contractor will be asked to contact the accounting office within a specified period of time to collect his money.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the following maintenance contract references (15, 24, 34, 39).

And, it was partially covered in the documents of the second maintenance contract references only.

Finally, this issue was not included in the documents of the remaining maintenance contract references.

55. Undertaking Certificate:

This is a standard form to be signed by the contractor in case of his non-compliance with any condition of the contract. The contractor will be held responsible to take the necessary measures to abide by all contract terms and conditions.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the following maintenance contracts references (5, 8, 13, 24, 34-37, 40).

And, it was partially covered in the documents of the second (2nd) and thirty eighth (38th) maintenance contract references.

Finally, this issue was not included in the documents of the remaining maintenance contract references.

3.3 Third Document: Specific Conditions and Scope of Work:

This document consists of a set of contractual issues to describe the contract work and its related specific conditions in a detailed form. It includes the work requirements, contractor personnel qualifications, administration procedures, the required procurement and supply, quality control requirements, the required maintenance work, the operation of existing system, janitorial work, periodic reports, rules related to property damages and other contract attachments.

The following are a list of the contractual issues to be included in the third document of the maintenance contract:

1. General:

This contractual issue includes a general statement about the contract scope of work. It contains the following information:

Job Title : Maintenance and operation of the Ministry Headquarters Building.

Contract No. : 38454

Location : Riyadh, Saudi Arabia.

Date : 20/5/11414

The benefits to be achieved from considering this contractual issue in the maintenance contract is to ensure that both parties are fully familiar with the important contract information that must be mentioned in all Notices and Proclamations.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the following maintenance contract references (24, 34, 36-38, 40).

And, it was partially covered in the documents of the following maintenance contract references (2, 10, 16).

Finally, this issue was not included in the documents of the remaining contract references.

The following are the contractual sub-divisions of this contractual issue:

1.1 General Requirements:

This includes a general statement to a contractor to demonstrate the required work to be accomplished by him under this contract. For instance, the required work to be performed by a contractor is to maintain and operate all the buildings and facilities that are mentioned in the contract and located in King Fahd Military City, Dhahran, Saudi Arabia.

The benefit of incorporating this contractual issue in the maintenance contract is to explain broadly to all parties involved in the contract,

the required work to be performed by the contractor and location of the work site.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the following maintenance contract references (3, 5, 6, 24, 33, 36- 38).

And, it was partially covered in the documents of the following maintenance contract references (2, 4, 7-13, 16, 34).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

1.2 Basic Requirements:

The contractor shall be mobilized, fully equipped and ready to commence the work on the effective date of this contract. This contractual issue must include the basic contract requirements to be performed by the contractor. Examples of the basic contract requirements are as follows:

- Buildings and facilities maintenance.
- The required janitorial work.
- The operation of all existing systems and plants.
- The provision of the required spare parts.
- The maintenance of existing utilities on the site.

The benefits of including this contractual issue in the maintenance contract is to define, in a specific terms, the scope of work to be performed by the contractor and it may describe or reference the specifications, standard and other documents which the contractor shall satisfy or adhere to in the performance of the work.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the following maintenance contract references (2, 36-38).

And, it was partially covered in the documents of the twenty fourth (24th) maintenance contract reference only.

Finally, this issue was not included in the documents of the remaining maintenance contract references.

1.3 Site Component Descriptions:

This demonstrates verbally, and statistically, the components of the site that are included in the contract. The following is an example of site component descriptions:

- The site location and area.
- The required buildings and facilities to be maintained:
 - Headquarters building.
 - Elementary and secondary educational buildings.
 - Training buildings.
 - Accommodation buildings and villas.
- The maintenance of existing facilities.

Each of the above items will be fully explained to give the contractor a clear idea about the required volume of work in each individual building and facility.

The benefits to be achieved from considering this contractual issue in the maintenance contract is to ensure that all prospective bidders obtain as much information as possible to assist them in the preparation of their bids.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the following maintenance contract references (2-5, 8-10, 22, 24, 30-34, 36, 37, 39, 40).

And, it was partially covered in the documents of the following maintenance contract references (6, 7, 11-16, 29, 38).

Finally, this issue was not included in the documents of the remaining contract references.

1.4 Contract Technical Terminologies:

Most maintenance contracts, contain a large number of technical terminology which needs to be defined clearly to both parties. This terminology might include the following:

Operation, maintenance, repair, major repair, rehabilitation, building system, installed equipment, janitorial work, landscaping work, emergency work and others.

The benefits to be gained from considering this contractual issue in the maintenance contract is to define the most important technical terminologies that are frequently used by both parties during contract performance and to avoid any sort of dispute or controversy between contract parties.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the thirty sixth (36th) and thirty seventh (37th) maintenance contract references.

And, it was partially covered in the documents of the following maintenance contract references (2, 24, 38).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

1.5 Performance Terminologies:

This includes a list of the most important performance terminologies that are incorporated in the maintenance contract. The following are an example of these terminologies:

Environmental protection measures, health standards, safety measures, performance measures, quality control measures, and others.

The benefits of incorporating this contractual issue in the maintenance contract is to define clearly the required performance and quality control measures to be achieved in the maintenance contract.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the thirty seventh (37th) maintenance contract reference only.

And, it was partially covered in the documents of the following maintenance contract references (2, 5, 9, 10, 12, 13, 34, 36, 38).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

1.6 Volume of Required Work:

This issue explains precisely, in terms of numbers, the required contract work to be performed by the contractor under the conditions and terms of the maintenance contract. It may be presented in the following pattern:

- Residential buildings to be maintained - 20 units
- Office buildings to be maintained - 10 units
- Commercial buildings to be maintained - 5 units
- Public facilities to be maintained - 2 units
- Central mosque to be maintained - 2 units

The advantages to be gained from considering this contractual issue in the maintenance contract is to ensure that contracted parties agree statistically about the volume of work required to be performed under the maintenance contract.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the following maintenance contract references (2, 10, 24).

And, it was partially covered in the documents of the following maintenance contract references (1, 4, 12).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

1.7 Regained Consultation and Engineering Experience:

The contractor warrants that it shall have sufficient competent and fully qualified personnel and supervisors to perform the work in a manner and within the time required by this contract. The contractor may be asked, by the Ministry, to supplement its personnel staff with additional qualified personnel to perform the work according to the required level of efficiency.

The benefits to be achieved from considering this contractual issue in the maintenance contract is to ensure the contractor assigns the most qualified personnel and may require under the conditions of the maintenance contract to consult other qualified personnel to support his own staff in the performance of the work.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the following maintenance contract references (2, 15, 24, 27, 36, 37).

And, it was partially covered in the documents of the thirty eighth (38th) maintenance contract reference only.

Finally, this issue was not included in the documents of the remaining maintenance contract references.

1.8 Fuel and Oil Consumption:

The contractor is responsible for ensuring that his vehicles and equipment are fully fueled, oiled, and maintained in good working order at all times, at no additional cost to the Ministry. The contractor shall assume that replacement vehicles and equipment are available when assigned vehicles and equipment are off-the road for maintenance or repair.

The advantages to be achieved from considering this contractual issue in the maintenance contract is to ensure that the contractor's vehicles and other equipment are provided with the necessary fuel and oil and shall be kept in a clean and well-maintained condition at all times to the satisfaction of the Ministry representative.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the thirty sixth (36th) maintenance contract reference only.

And, it was partially covered in the documents of the thirty eighth (38th) maintenance contract reference only.

Finally, this issue was not included in the documents of the remaining maintenance contract references.

2. Organization and Contractor Personnel:

This contractual issue is mostly concerned with all aspects that relate to contractor's personnel qualifications, requirements and responsibilities. It will include, but is not limited to the following topics: personnel identification tags, personnel uniforms, personnel appearance and attitude, personnel training and personnel medical fitness.

The following are benefits to be achieved from considering this contractual issue and its related contractual sub-divisions:

- To ensure that all the contractor's personnel performing the work shall be physically fit and free from any disease.
- To ensure that the contractor's expatriate personnel shall obtain the required passports, visas, and permits necessary to enter into and to exit from Saudi Arabia.
- To ensure that the contractor's personnel shall comply with all applicable Ministry safety and work regulations.
- To ensure that the contractor specifically acknowledges its responsibilities to its personnel pursuant to labor and workmen law of the Kingdom of Saudi Arabia.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the following maintenance contract references (2, 5, 9, 11-14, 17, 18, 20, 22-24, 26, 28-37, 39, 40).

And, it was partially covered in the documents of the following maintenance contract references (10, 15, 16, 19, 21, 25, 27, 38).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

The following are all the related contractual sub-divisions of the organization and contractor personnel:

2.1 Personnel Identification Tags:

The contractor shall provide to its personnel, identification tags bearing their names written both in Arabic and English. The identification tag must be worn by each personnel in such a manner that it is prominently displayed and visible at all times. Wearing ID tags do not relieve contractor's personnel from carrying ID cards.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the following maintenance contract references (7, 9-14, 17, 18, 20, 23, 24, 26, 32, 34, 36, 39, 40).

And, it was partially covered in the documents of the following maintenance contract references (2, 15, 16, 19, 21, 22, 25, 27, 33).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

2.2 The Contractor's Personnel Uniforms:

The contractor's personnel shall be properly dressed (uniforms if advised by the Ministry), bearing an insignia, by which the contractor personnel may be identified, clean and in good appearance at all times while performing the work. The contractor shall maintain a supply of clean uniforms to enable dirty or damaged uniforms to be replaced when necessary. The contractor shall, at no additional cost to the Ministry, bear the cost of uniforms, and its personnel shall not be charged therefore. The uniforms shall receive the approval of the Ministry representative. The contractor shall submit uniform samples or pictures to the Ministry representative for approval, prior to procuring or replacing same. The contractor's failure to provide uniforms shall result in the removal of such personnel from the work or the Ministry may elect to buy the uniforms and deduct the cost

incurred plus handling charges, from the contractor's monthly invoice.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the following maintenance contract references (7, 9-15, 17, 18, 20, 22-24, 26, 32, 34, 36, 37, 39, 40).

And, it was partially covered in the documents of the following maintenance contract references (2, 16, 19, 21, 25, 27, 33, 38).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

2.3 The Contractor's Personnel Appearance and Attitude:

All the contractor's personnel assigned to the contract shall possess a good attitude and decent behaviour. All the contractor's personnel shall be subjected to a continuous screening during the term of the contract, and their behaviour shall be evaluated regularly by the Ministry representative. The contractor shall assign, for this contract, only those personnel whose resumes have been approved by the Ministry representative and who have passed the Ministry's test. However, if it is subsequently proved that any of these personnel are not competent to perform his duties, the contractor shall replace him within a specific period without additional cost to the Ministry.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the following maintenance contract references (2, 7, 9-14, 18, 20, 22-24, 26, 32, 34, 36, 37, 39, 40).

And, it was partially covered in the documents of the following maintenance contract references (15-17, 19, 21, 25, 27, 33, 38).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

2.4 The Contractor's Personnel Training:

The contractor is responsible for all types of training required by his personnel prior to their performance of the operation and main-

tenance work at the site. The training might include, but is not limited to, the following:

- The operation of the existing systems in the buildings.
- Water treatment plant operations.
- Sewage treatment plant operations.
- Central air condition unit operations.
- Gas Turbine operations.
- Fire alarm system operations.
- Other electronic system operations.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the following maintenance contract references (2, 9-14, 18-20, 22-26, 32, 34, 36, 39, 40).

And, it was partially covered in the documents of the following maintenance contract references (15-17, 21, 27, 33).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

2.5 The Contractor's Personnel Medical Fitness:

The contractor shall furnish the Ministry with a written medical fitness certificate for each of his personnel performing work under this contract. Each medical certificate, shall be signed by a licensed physician in Saudi Arabia and states that the person is in good physical condition for the assigned duties and free from communicable diseases. These certificates shall be submitted every twelve months. Medical fitness certificates issued outside the Kingdom of Saudi Arabia shall not be accepted by the Ministry.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the following maintenance contract references (5, 9, 10, 13, 14, 18-20, 22-26, 32, 34, 36, 37, 39, 40).

And, it was partially covered in the documents of the following maintenance contract references (16, 17, 21, 27, 33, 38).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

3. Administration Affairs:

This contractual issue includes all aspects related to the contractor's administrative system to be adopted in the maintenance contract. It includes the administration procedure of the maintenance work, the contractor personnel management system and proposed contractor computerized management system.

The following are the benefits of including this contract issue and its related sub-divisions in the maintenance contract:

- to ensure that the contractor employs a good administrative system.
- to develop a standardized format (work order) to facilitate the contractor and Ministry technical contacts.
- to ensure that all types of administrative contact between both parties is well documented.
- to develop a technical data bank, to be used later by the Ministry to evaluate performance.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the following maintenance contract references (2, 11, 14, 20, 22-26, 32, 34, 36, 37, 39).

And, it was partially covered in the documents of the following maintenance contract references (6, 7, 9, 21, 27, 38, 40).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

The following are the related contractual sub-divisions of the administration affairs contractual issue:

3.1 Administration Procedure:

The contractor shall be responsible for the provision of all supporting administration services, maintenance and operational work. It includes, but not limited to, the following:

- The contractor shall provide a reasonable number of administrative personnel to support and facilitate the work of maintenance and operations.
- Provide the required facilities and equipment to perform the administrative work such as photocopy machines, computers, facsimiles and others.
- The contractor shall provide a pleasant working environment for the administrative personnel to perform their work.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the following maintenance contract references (2, 11, 14, 25, 26, 32, 34, 36, 39).

And, it was partially covered in the documents of the following maintenance contract references (8, 24, 27, 40).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

3.2 The Contractor's Personnel Management:

The contractor shall administer the overall activities of the contract personnel and will ensure that the contract terms and conditions are thoroughly complied with, which shall include, but not limited to, the following:

- ensures the validity of medical certificates on each person and that all resumés and qualification certificates meet the requirements and are available at the job site.
- ensures that all contractor personnel perform the work as per contract requirements, frequencies or as directed by the Ministry representative.

- ensures that all contractor personnel accommodations are hygienically maintained.
- ensures on a daily basis that all contract personnel are wearing clean approved uniforms, safety equipment and carrying Ministry Identification Cards.
- ensures that all contractor personnel and employees are not engaged in work inside the site after working hours.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (2-5, 7, 11- 22, 28, 30-32, 34, 36, 37, 39).

And, it was partially covered in the documents of the following maintenance contract references (6, 8-10, 24, 25, 27, 38, 40).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

3.3 Computerized Management System:

The contractor is required under the conditions of the maintenance contract, to furnish the Ministry with the proposed computerized management program to be used in the following aspects of work:

- Maintenance and Operational Work.
 - Planning Maintenance Program.
 - Preventive Maintenance Program.
 - Emergency Maintenance Program.
- Data Banks Program.
- Spare Part Consumption Program.
- Periodical Report.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents

of the first (1st) and thirty ninth (39th) maintenance contract references only.

And, it was partially covered in the documents of the second (2nd) maintenance contract reference only.

Finally, this issue was not included in the documents of the remaining maintenance contract references.

4. Procurement and Supply:

Except where the contract specifically states that the Ministry shall provide procurement and supplies, the contractor shall provide all procurement and supplies necessary to perform the work defined in the maintenance contract and also the required supporting facilities, such as, warehouses and offices. The contractor shall administer the overall activities of procurement and ensure that the contract terms and conditions are thoroughly complied with, which shall include, but not limited to the following:

- All the necessary materials and equipment required to perform the janitorial work.
- All the necessary materials and equipment required to perform the maintenance and operational work.
- The required spare parts for all existing systems and equipment.
- Office furniture and equipment.
- The required materials and equipment for safety purposes.

The following are the main benefits to be achieved from considering this contractual issue and its related sub-divisions in the maintenance contract:

- To ensure that the contractor's procurement and supply system is clearly defined and well organized.
- To ensure that the contractor erected the necessary supporting facilities, such as, warehouses, offices and stores.
- To define Ministry and contractor responsibilities and obligations toward procurement and supplies.

- To determine the minimum level of materials and supplies that the contractor is required to maintain in the stores.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (7, 13, 22, 34, 36, 37).

And, it was partially covered in the documents of the following maintenance contract references (2, 4, 5, 8-12, 15-21, 24, 38).

Finally, this issue was not included in the documents of the remaining contract references.

The following are the related contractual sub-divisions of the procurement and supply issue:

4.1 Elementary Requirement:

The contractor is required to perform the following elementary work during the preparation of his procurement system:

- To prepare a procurement plan to answer all the requested work of maintenance and operations.
- To prepare materials and equipment plans to respond to all the required work of cleaning.
- To assign inspection teams to examine all the provided materials and equipment, comply with the conditions and terms of the contract.
- To develop a computerized program of materials and equipment to be distributed to different sites.
- To erect a maintenance workshop to restore or examine equipment failure.
- To develop a functional system for the removal of scrap and obsolete items.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (3, 6, 39).

And, it was partially covered in the documents of the fourth (4th) maintenance contract reference only.

Finally, this issue was not included in the documents of the remaining maintenance contract references.

4.2 Continuous Requirement:

The contractor is required, during the contract period, to evaluate the procurement system used to satisfy the current conditions of work and to guarantee that this system is functioning well as to support the maintenance and janitorial works of the contract. This includes the following set of requirements:

- To monitor the minimum allowable level of stock for all materials in the stores.
- To obtain all the necessary approvals from the Ministry representatives for all imported materials.
- To store the materials, equipment and spare parts in environmentally conducive conditions to satisfy the manufacturer's storing requirements.
- To satisfy all the safety requirements in the stores and warehouses.
- To submit a periodical report to the Ministry representative to indicate the amount of materials and equipment consumed in a certain period of time.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (3, 6, 8, 39).

And, it was partially covered in the documents of the eleventh (11th) maintenance contract reference only.

Finally, this issue was not included in the documents of the remaining maintenance contract references.

4.3 Replacement Procedures:

The contractor shall submit a written report to the Ministry representative to explain the objectives to be achieved from the replacement of any existing system, equipment and vehicles. This report shall present the contractor's economical analysis and recommendations to any new proposed items to substitute the existing ones.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (13, 37, 39).

And, it was partially covered in the documents of the fourth (4th) and thirty eighth (38th) maintenance contract references only.

Finally, this issue was not included in the documents of the remaining maintenance contract references.

4.4 Scrap and Obsolete Items Destruction:

The contractor shall coordinate with the Ministry representative to discuss the ways and methods in which the contractor is going to destroy and remove the site scrap and obsolete materials. This will include the following set of items:

- Obsolete materials and scrap.
- Obsolete equipment and vehicles.
- Consumed materials.

The contractor is required to obtain the approval of the Ministry representative prior to the removal or the destruction of any materials, equipment or appliances on the site.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (6, 8, 13, 37, 39).

And, it was partially covered in the documents of the following maintenance contract references (9, 24, 38).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

5. Quality Control and Quality Assurance:

The Quality Control and Quality Assurance Department will be the Ministry representative. This is to ensure, that all contract work of maintenance, operations and cleaning are performed according to the designated level of performance assigned by the Quality Control Department.

The following are the benefits to be achieved from incorporating this contractual issue and its sub-divisions in the maintenance contract:

- To achieve the highest level of performance in all contract work.
- To accomplish the high management objectives of safety.
- To ensure that all site building facilities and systems are properly and carefully maintained and used.
- The contractor will be aware that his performance on the site is constantly monitored by the Ministry's Quality Control Department.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (13, 37, 39).

And, it was partially covered in the documents of the following maintenance contract references (2, 16-19, 24, 38).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

The following are the related contractual sub-divisions of this issue:

5.1 Quality Control and Quality Assurance Objectives:

The following are the objectives to be achieved by the contractor's Quality Control and Quality Assurance Department:

- To perform all Quality Control and Quality Assurance work.

- To examine, with the assistance of the Ministry's Quality Control Office the effectiveness of the existing system of Quality Control.
- To ensure that the contractor's Quality Control Department is responding to the Ministry representative's remarks to improve the current existing Quality Control system.
- To ensure that the contract personnel are fully aware of their responsibilities and duties.
- To ensure that the work of Quality Control does not interfere with the Ministry's personnel occupying the site.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (7, 9, 13, 25-27, 30, 33, 34, 36, 37, 39,40).

And, it was partially covered in the documents of the following maintenance contract references (2, 4, 5, 10, 16-19, 23, 24, 38).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

5.2 Quality Control and Quality Assurance Personnel:

The contractor's Quality Control personnel assigned to the maintenance contract shall meet or exceed the qualifications stated in the attachment of the maintenance contract. The contractor shall submit a resume, together with two ID photographs and photocopies of supporting documentation of the educational qualifications and experience in the field of Quality Control, of each person to the Ministry's representative. The Ministry's representative will either approve or disapprove the qualifications, as submitted, on each person. All contractor personnel shall be interviewed and tested by the Ministry on the work site before being accepted.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents

of the following maintenance contract references (2, 25, 26, 33 ,34, 36, 37, 39, 40).

And, it was partially covered in the documents of the following maintenance contract references (6, 8-11, 16, 18, 19, 23, 24, 38).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

5.3 Quality Control and Quality Assurance Program:

The contractor is required to prepare the following program on work related Quality Control:

- The contractor personnel performance evaluation.
- Site equipment and system performance.
- Procurement and supply performance.
- The contractor's response to the requested maintenance and operational work.
- The performance of administration and other supporting work.
- The safety measure applications.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (2, 24-26, 34, 36-40).

And, it was partially covered in the documents of the following maintenance contract references (13, 19, 23).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

6. Safety Measures and Fire Protection:

The contractor shall provide all the requirements needed to satisfy the highest level of safety and to ensure at all times the safety of all residents, facility users, pedestrians and the contractor personnel.

The following are the benefits to be achieved from considering this contractual issue in the maintenance contract:

- To ensure that the contractor establishes a good Safety Department to satisfy the Ministry's stated safety objectives.
- To ensure that the contractor shall comply with applicable Saudi Arabian Government and Ministry Safety Regulations and Requirements.
- To ensure that the contractor shall be responsible for safety within his areas of operation.
- To ensure that the contractor shall initiate and maintain a Safety Training Program for all contract personnel, which shall include but not limited to, the following programs:
 - General safety rules and awareness.
 - Specific safety hazards on work locations.
 - Safe hand tools.
 - Use of personal protection equipment.
 - Hygienic material.
 - Safe equipment.
 - Safe vehicles.
 - Proper lifting methods.
 - Personal health.
 - Emergency response to fires and accidents.
 - Reporting techniques for unsafe conditions.
 - Employee's Safety Suggestion Program.
 - Driver Safety Program.
 - Unsafe conduct.

- Unsafe work practices.
- Motor vehicle collisions.
- Traffic violations.
- On the job injury.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (2, 5, 15, 24, 25, 27, 34, 36- 40).

And, it was partially covered in the documents of the twenty third (23rd) and twenty sixth (26th) maintenance contract references only.

Finally, this issue was not included in the documents of the remaining maintenance contract references.

7. Maintenance Work:

The contractor shall perform all the work of preventive and remedial maintenance of offices, residential units, associated facilities, schools, industrial units, medical buildings and supporting facilities. The contractor is required to develop a strategic asset plan for long term allocation of resources to related activities of maintenance, operation and replacement. This plan must include the following types of work:

- Planned maintenance.
- Preventive maintenance.
- Emergency maintenance.
- Maintenance of supporting equipment and services.
- List of buildings to be maintained.
- List of electrical systems to be maintained.
- List of telephone systems to be maintained.
- Water systems and pump maintenance.

- Fuel station and fuel tank maintenance.
- Sanitation landscaping and irrigation system maintenance.
- Mechanical system maintenance.
- Fire alarm and other electronic system maintenance.

The following benefits can be gained from considering this contractual issue and its related sub-divisions in the maintenance contract:

- To ensure that the contractor is clearly informed on the required maintenance work to be performed on the site.
- To determine the general level of expenditure's on maintenance work to achieve the desired standard.
- To avoid large fluctuations in annual expenditures by directing the contractor to spread-out the large items and any backlogs over a period of time.
- To direct the contractor in regards to the optimum time to carry out major repairs and improvements.
- To ensure that the contractor provides the minimum personnel to conduct the maintenance work.
- To gear the maintenance program to be performed to the Ministry's policy, so that it is compatible with decisions relating to the use of the building.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (1, 5-12, 14, 16, 18-20, 22-31, 33, 34, 36-40).

And, it was partially covered in the documents of the following maintenance contract references (2, 13, 15, 17, 21).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

The following are the related sub-divisions of this issue:

7.1 Planned Maintenance:

This is the type of maintenance that is organized and carried out with forethought, control and the use of records to a pre-determined plan. The contractor is required to prepare all related instructions of planned maintenance for each individual item of work to be maintained based on the manufacturer's catalogue guidelines.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (7, 14, 16, 18, 20, 21, 24, 36-38).

And, it was partially covered in the documents of the following maintenance contract references (1, 2, 6, 8-10, 13, 15, 17, 19).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

7.2 Preventive Maintenance:

This is the type of maintenance that the contractor is required to perform at pre-determined intervals, or, to other prescribed criteria based on the manufacturer's guidelines and instructional books. This is intended to reduce the likelihood of an item not meeting an acceptable condition. The contractor shall prepare all the required Preventive Maintenance Schedules for all site systems and equipment on a daily, weekly, monthly and annual basis according to the manufacturer's instructions. These schedules shall be documented at all times to demonstrate that the contractor is performing all the required work of Preventive Maintenance.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (7, 14, 16, 18, 20, 21, 24, 36-38).

And, it was partially covered in the documents of the following maintenance contract references (1, 2, 6, 8-11, 13, 15, 17, 19).

Finally, this issue was not included on the documents of the remaining contract references.

7.3 Emergency Maintenance:

The contractor shall respond to emergency calls to restore or repair any failure in work categories stated in the contract. Failure of the contractor to fix the reported emergency problem, might cause a total or partial deduction in the the contractor's monthly payment.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (2, 5, 7, 14, 16-18, 20, 24, 36-38).

And, it was partially covered in the documents of the following maintenance contract references (1, 6, 8-10, 13, 15, 19, 21).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

7.4 Maintenance of Supporting Equipment and Services:

The contractor shall maintain and operate the existing supporting equipment and services stated in the contract. This work, shall not be considered by the contractor as a secondary requirement of the contract, because, the performance of the resident's is totally affected by the operation of the supporting equipment and services. The contractor is required to provide the most qualified personnel to conduct the maintenance work needed according to the conditions and terms of the contract.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (14, 16, 18, 20, 21, 24, 36-38).

And, it was partially covered in the documents of the following maintenance contract references (1, 2, 6, 13, 15, 17, 19).

Finally, this issue was not included in the documents of the remaining contract references.

7.5 List of Buildings to be Maintained:

The maintenance contract shall demonstrate clearly, the names, locations and number of different types of buildings to be maintained by the contractor under the maintenance contract. The following building information must be addressed in the maintenance contract:

- The total floor area of each individual building.
- The existing systems in each building.
- The existing furniture in each building.
- The function to be performed inside each building.
- The occupant's working hours inside each building.
- The types of building materials used to construct each building on the site.
- Number of occupants in each building.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (1, 3, 5-9, 11, 12, 15, 16, 18, 20, 21, 25, 27, 28, 30, 33, 34, 36, 38).

And, it was partially covered in the documents of the following maintenance contract references (2, 10, 13, 17, 19, 24, 29, 37).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

7.6 List of Electrical Systems to be Maintained:

The maintenance contract shall explain fully the existing electrical system on the site and the required maintenance and operational procedures that are needed for the main electrical stations, sub-stations, main distribution board, transformers and the street lighting system. The contractor is required to follow the Saudi Consolidated Electric-

ity Company and the Ministry of Safety Measures to avoid electrical current failure or any human or property damages.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the following maintenance contract references (1, 3, 5, 6, 9-12, 15, 16, 18, 20, 21, 26-28, 30, 36, 38).

And, it was partially covered in the documents of the following maintenance contract references (2, 13, 17, 19, 24, 25, 37).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

7.7 List of Telephone Systems to be Maintained:

The contractor is required to maintain and operate the existing telephone network and to provide all spare parts needed during the contract period. Under the maintenance contract, the contractor shall conduct the required tests to ensure, that the system is functioning and operating on the optimum level. The Ministry has the right to ask the contractor to assign a specialized sub-contractor to perform the maintenance of the existing telephone system if the contract personnel fail to do their work.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (1, 9-12, 16, 18, 20, 21, 30, 36, 38).

And, it was partially covered in the documents of the following maintenance contract references (2, 13, 17, 19, 24, 37).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

7.8 Water System and Pumps Maintenance:

Maintenance contracts must specify clearly to the contractor the type of water system to be maintained on the site and also its related types of work such as the water treatment plant, water tanks, water well,

water line and water pumps. The required scope of work to be performed by the contractor shall include the followings:

- the operation of the water treatment plant.
- the provision of all chemical materials and spare parts needed for the operation of the water treatment plant.
- the inspection of the existing water line.
- the replacement of any defected water pumps.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (1, 5-7, 9-12, 16, 18, 20, 21, 30, 36, 38).

And, it was partially covered in the documents of the following maintenance contract references (2, 13, 17, 19, 24, 37).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

7.9 Fuel Station and Fuel Tank Maintenance:

Under the conditions of the maintenance contract, the contractor is required to maintain the existing fuel station and tanks to be operated to the optimum level of operation.

The following are the major maintenance work to be performed by the contractor on the fuel and tanks:

- To operate the fuel station according to the required daily working schedule.
- To assign a well trained and qualified person to work in the station.
- To inspect periodically the storage fuel tanks to prevent any sort of scrap or dirt accumulation.
- To follow all the required safety measures in the station.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (1, 9-12, 16, 18, 20, 21, 28, 32, 36).

And, it was partially covered in the documents of the following maintenance contract references (2, 13, 17, 19, 24, 37).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

7.10 Sanitation, Landscaping and Irrigation System Maintenance:

In all maintenance contracts, the work of sanitation, landscaping and irrigation must be clearly defined to the contractor. The following are the major works to be accomplished under this contractual issue:

- The contractor shall maintain the sanitation lines, tanks and sewage treatment plant to avoid the flooding or leakage of sewage water.
- To designate qualified operators and inspectors to maintain the sewage treatment plant.
- To perform the required inspection on all sites as directed by Ministry supervision.
- To decorate the open space in the site with the appropriate landscaping materials to enhance site beautification.
- To maintain the existing irrigation lines and ensure that plants and trees receive the required water to grow.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (1-3, 5, 6, 8-12, 15, 16, 18, 20, 21, 28, 36, 38, 40).

And, it was partially covered in the documents of the following maintenance contract references (13, 17, 19, 24, 25, 37).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

7.11 Mechanical System Maintenance:

A definite schedule of maintenance should be provided for all compressors. Frequent inspections of the unit, along with cleaning and lubrication, will add considerably to the life of the compressor. While certain time intervals are indicated for maintenance procedures, in most instances they are considered minimum and actual scheduling should depend upon usage. Failure to maintain proper conditions of cleanliness in air duct systems and carelessness in connection with repair operations, have been important contributing causes of several fires which have involved air-conditioning systems. Systems operated only part of the year should be given a thorough general checkup before starting operations and again before shutting down.

The following recommendations apply, in general, to the period of operation of the system:

Fresh air intakes: Conditions outside the fresh air intake should be examined at the time of inspection of the ducts. Items to be noted are: accumulation of combustible materials near the intake; presence of buildings or structures which may present an exposure to the intake, allowing smoke and fire to be drawn in; operating conditions of any automatic dampers; designs to protect the opening against exposure to fire.

Inspection and cleaning of ducts: Inspections to determine the amount of dust and waste material in the ducts should be made semi-annually, except, that if after several inspections, such frequent inspections are found unnecessary. The interval between inspections may be adjusted to suit the conditions.

Inspection and cleaning of the plenum chamber: the plenum chamber should be inspected quarterly, except, that if after several inspections such inspections are found unnecessary.

Filters: All air filters shall be kept free of excess dust and combustible material. Unit filters shall be renewed or cleaned where the resis-

tance to air flow has increased to five times the original resistance, or when it has reached a maximum of 0.5 inch water gauge, whichever is higher.

Fans, fan motors and controls: Fans and fan motors should be inspected at least quarterly and cleaned and lubricated when necessary.

Fire doors and fire dampers: Each fire door and fire damper should be examined once a year, giving attention to hinges and other moving parts to ensure that it is in a good operating condition.

Repair work: Great caution should be exercised in the use of open flames or spark emitting devices, inside of ducts, plenum chambers or near air intakes.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (1, 3, 6, 9, 15, 16, 18, 20, 21, 28, 33, 34, 36, 38).

And, it was partially covered in the documents of the following maintenance contract references (2, 13, 17, 19, 24, 25).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

7.12 Fire Alarm and Other Electronic System Maintenance:

The maintenance contract must include a detailed description of the fire alarm system to be maintained. The contractor is required to investigate the installed fire alarm system and its components to assist him to prepare the periodical preventive maintenance and also, to assign qualified operators and supervisors to inspect the system. The maintenance contract shall include the other electronic systems installed in the work site.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (1, 6, 9, 16, 18, 20, 21, 30, 36, 38).

And, it was partially covered in the documents of the following maintenance contract references (2, 11-13, 17, 19, 24, 37).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

8. Installed System Operation on the Site:

Under the maintenance contract, the contractor is required to provide qualified operators to perform all the necessary work for system operations. The following are required systems to be maintain by the contractor:

- Air conditioning system.
- Water and sewage plants.
- Fire alarm system.
- Telephone system.
- Gas turbine stations.
- Fuel stations.
- Other requested systems to be operated by the contractor.

The advantages to be gained from considering this contractual issue is, the maintenance contracts are to ensure that the the contractor will be responsible for all the operational work of the systems on the site. Secondly, the contractor shall assign the work of operations to the most qualified operator's according to the required qualifications stated in the contract.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (1, 9, 16-21, 28, 30, 32, 34, 36, 38, 40).

And, it was partially covered in the documents of the following maintenance contract references (2, 13, 24, 31, 33).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

9. Janitorial Work:

The contractor shall provide all personnel, equipment, materials and supplies necessary to perform the cleaning work for all facilities and buildings located on the site. This includes, but not limited to, vacuuming, sweeping, mopping, dusting, trash collection, window washing, floor waxing and polishing.

The following are the major benefits to be achieved from considering this contractual issue and its sub-divisions in the maintenance contract:

- To indicate to the contractor the required level of cleaning to be performed on the site.
- To ensure that cleaning work does not interfere with the employee's working activities.
- To determine for the contractor the method in which the Ministry wants the contractor to perform the cleaning work on a daily, weekly and monthly basis.
- To specify for the contractor the minimum number of personnel and supervisor's required for the work and their qualifications.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (1, 3, 5-12, 16-21, 23, 28, 30, 32, 34, 36, 38, 39, 40).

And, it was partially covered in the documents of the following maintenance contract references (2, 13, 15, 24- 27, 31, 33, 37).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

The following are the related contractual sub-divisions of this issue:

9.1 Daily Janitorial Work:

The contractor shall submit for the Ministry representatives a daily schedule of the cleaning activities on the site within ten days of the notice to proceed the contract work. The contractor shall supply all

the necessary equipment, materials and tools to perform the work as stated in the contract Conditions and Specifications.

A detailed investigation into the latest maintenance contract indicates that this contractual issue was fully covered in the documents of the following maintenance contract references (2, 5, 7-10, 14, 17-21, 28, 30, 32, 34, 36, 38).

And, it was partially covered in the documents of the following maintenance contract references (1, 3, 6, 13, 15, 16, 25-27, 31, 33, 37).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

9.2 Weekly Janitorial Work:

The contractor shall provide all personnel, equipment, materials and supplies necessary to perform weekly janitorial work for the site. This weekly janitorial work shall supplement the contract's daily janitorial work to keep the site in an acceptable condition.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (2, 5, 7-10, 14, 17-21, 28, 30, 32, 34, 36, 38).

And, it was partially covered in the documents of the following maintenance contract references (1, 3, 6, 13, 15, 16, 26, 27, 31, 33, 37).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

9.3 Monthly Janitorial Work:

The monthly janitorial work is design to cover all the areas which are not being used by the site residents and the areas which require a minimum level of janitorial work, such as, the roof of the buildings, open areas, etc.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (2, 5, 7-10, 14, 17-21, 24, 36, 38).

And, it was partially covered in the documents of the following maintenance contract references (1, 3, 6, 13, 15, 16, 25, 37).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

10. Periodic Reports:

The contractor shall submit to the Ministry representative a monthly report consisting of the following:

- The number of personnel and equipment the contractor used in the work.
- A detailed report listing the status of the existing systems and plant conditions.
- The accomplished maintenance schedules performed in the previous month.
- The amounts of each spare part replaced in the previous month.
- Provided materials in the previous month.
- Maintained quality standards as specified in the contract.
- Meets contractual schedules and deadlines as specified in the contract.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (1, 6, 13, 16, 21, 24).

And, it was partially covered in the documents of the fifteenth (15th) maintenance contract reference only.

Finally, this issue was not included in the documents of the remaining maintenance contract references.

11. Property Damages:

The contractor shall report promptly to the Ministry representative any damage to Ministry property such as, but not limited to, utility lines, sidewalks, roads, furniture, fittings, equipment, electrical items, windows and walls.

The benefits to be achieved from considering this contractual issue in the maintenance contract is to ensure that the contractor agrees to defend, indemnify and hold the Ministry from any claims, expenses, loss ,damage, fine or penalty incurred by, assessed against, or demanded from the Ministry as a result of the contractor's failure to fulfill the obligations set forth in this contract.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (1-18, 24, 30, 34, 36-40).

And, it was partially covered in the documents of the following maintenance contract references (25-28).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

12. Attachment:

This includes additional information to supplement the documents of the maintenance contract such as the Site Location Map, site facilities and buildings locations, the existing systems and equipment and the contract personnel qualifications.

The following are the benefits to be achieved from considering this contractual issue and its related sub-divisions in the maintenance contract:

- To explain any topics in the contract in an elaborate manner.
- To ensure that the contractor fully understands the required scope of work.
- To reduce the controversy and disputes between the contractor and Ministry.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (16, 19, 24).

And, it was not partially covered in the documents of the maintenance contract references .

Finally, this issue was not included in the documents of the remaining maintenance contract references.

12.1 Site Location Map:

The contractor shall be supplied with the Work Site Location Map depicting the surrounding and major roads leading to the site.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (16, 19, 24).

And, it was not partially covered in the documents of the maintenance contract references .

Finally, this issue was not included in the documents of the remaining maintenance contract references.

12.2 Site Facilities and Building Location:

The contractor shall be provided with all Site Facility and Building Location Maps. The Ministry shall furnish the contractor with a set of as-built drawings for each individual building and facility to be included in the scope of work.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (16, 19, 24, 38, 40).

And, it was not partially covered in the documents of the maintenance contract references.

Finally, this issue was not included in the documents of the remaining maintenance contract references.

12.3 List of Existing Systems and Equipment:

The contractor shall be provided with a list of the Existing Systems and Equipment. The list will include, the date of installation, manufacturer's names, local dealers names, technical specification catalogues and other related data.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (1, 16, 19, 24).

And, it was not partially covered in the documents of the maintenance contract references .

Finally, this issue was not included in the documents of the remaining maintenance contract references.

12.4 List of the Contractor Personnel Qualifications:

The contractor shall submit a resume, together with two ID photographs and supporting documentation of the educational qualifications and work experience of all personnel to the Ministry representative, who shall either, approve or disapprove the qualifications as submitted on each and every personnel.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (1,16, 19, 24).

And, it was not partially covered in the documents of the maintenance contract references .

Finally, this issue was not included in the documents of the remaining maintenance contract references.

3.4 Fourth Document: Bill of Quantities:

Most maintenance contracts include a Bill of Quantities which consists of a schedule of items of work to be performed with quantities entered against each item. The contract quantities are usually being proposed in accordance with a specified

standard method of measurement of building works. A Bill of Quantities sets out in a systematic method the basic quantities and a full description of all items of labour, materials and equipment required to perform the work.

The following are the benefits to be achieved from considering this document in the maintenance contract:

- It gives a brief description of work and the types of contracts to be used.
- It provides to the contractor, a detail of the work which will be grouped into appropriate sections.
- These sections demonstrate to the contractor the quality of the main materials to be used and the standard workmanship.

The following are the related contractual issues of this document:

1. The Percentage of Various Work, Personnel Payment and Spare Parts from the Total Contract Cost:

The maintenance contract must define clearly, the percentage of money devoted to each item of work, materials, personnel and spare parts. Table No.3 demonstrates an example of the way in which different contract works are presented with their relative cost percentages.

The following are the advantages to be gained from incorporating this contractual issue in maintenance contracts:

- To provide a uniformed basis for competitive tenders.
- To facilitate the contractor's progress payment procedure.
- To provide a schedule of prices for the valuing of variation orders during the course of the contract.
- To minimize the excepted controversy and disputes between the contract parties.

Table No. 3: An Example of Contract Work Percentage Methods

Types of Works or Items	Devoted Percentage from the Total Chemical Cost
Maintenance Services.	30%
Operational Work.	15%
Personnel Rate.	15%
Rehabilitation work.	10%
Materials and equipment.	10%
Spare parts.	10%
Janitorial work.	10%

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (7, 9, 14, 25, 26, 28, 34, 36-40).

And, it was partially covered in the documents of the thirteenth (13th) maintenance contract reference.

Finally, this issue was not included in the documents of the remaining contract references.

2. The Contractor Personnel Rate:

Under this contractual issue, the contractor is required to prepare a set of schedules for various types of personnel or craftsmen that might be needed. Based on these schedules, the contractor's will be able to submit their offers to the Ministry on a daily and monthly basis.

The following are the benefits to be achieved from considering this contractual issue in the maintenance contract:

- It allows for the client to obtain additional manpower during the contract period without any major changes in the maintenance contract.
- It will help the Ministry to pay the contractor the proper amount of money based on the actual number of personnel working on the site.
- It will help the Ministry to decrease the number of specific craftsmen and to increase the other based in the existing site demand.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (1-9, 11-15, 17-19, 21-40).

And, it was partially covered in the documents of the sixteenth (16th) maintenance contract reference.

Finally, this issue was not included in the documents of the remaining maintenance contract references.

3. **Spare Parts Consumption Rate:**

The contractor is required to submit to the Ministry, a set of schedules for the types of spare parts that might be needed for various categories of the work during the contract duration. Table No. 3.1 is an example of the method in which a spare parts schedule can be prepared.

Table No. 3.1 Spare Parts Consumption Rate

Categories of Work	The Expected Rate of Consumption
1. Mechanical system.	200,000 S.R.
1.1 Air conditioning system.	100,000 S.R.
1.1.1 Central air conditioning unit.	40,000 S.R.
1.1.2 Split unit.	30,000 S.R.
1.1.3 Window type.	30,000 S.R.
1.2 Water treatment plant.	50,000 S.R.
1.3 Sewage treatment plant.	50,000 S.R.
2. Electrical system.	120,000 S.R.
2.1 Main station.	40,000 S.R.
2.2 Sub-station.	30,000 S.R.
2.3 Transformers.	25,000 S.R.
2.4 Circuit breakers.	25,000 S.R.
3. Others	

The benefits to be achieved in considering this contractual issue in the maintenance contract is to know in advance, the different spare part rates to be needed on the site during the contract period. Secondly, to develop an agreed rate for spare parts in order to compensate the the contractor for supplied spare parts.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (1, 2, 9, 11-14, 19, 22-26, 28, 30, 31, 34, 36-40).

And, it was partially covered in the documents of the sixth (6th) and sixteenth (16th) maintenance contract references only.

Finally, this issue was not included in the documents of the remaining maintenance contract references.

4. Janitorial Work rate:

Cleaning costs represent approximately thirty three (33%) percent of the total cost of operating the average building. The contractor is required to present to the Ministry the annual cleaning cost in Riyals, and it should include the following:

- Wages including overtime.
- Uniforms, vacation pay, pensions, sick leaves, insurance and holiday.
- Required cleaning materials, equipment and tools.

The following are the benefits to be gained from incorporating this contractual issue in the maintenance contract:

- To specify clearly the designated costs required to perform the janitorial work.
- To assist the Ministry representative in knowing precisely the contract personnel, materials and tools needed to perform the janitorial work.
- To ensure that the contractor shall obtain the proper compensation for the actual janitorial work performed on the site within a specified period of time.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (1, 2, 5-9, 14, 19, 22-26, 28-31, 34, 36-40).

And, it was partially covered in the documents of the tenth (10th) and thirteenth (13th) maintenance contract references only.

Finally, this issue was not included in the documents of the remaining maintenance contract references.

5. Maintenance Work Rate:

The contractor is required to submit a cost schedule for all types of maintenance work to be performed on the work site. These schedules must include:

- The Preventive Maintenance to be carried out at pre-determined periods for all site systems and plants.
- The emergency maintenance work to correct any reported system or appliance failure. This includes all the required work to restore the system to its most operational condition.

The benefits to be achieved from considering this contractual issue in the maintenance contract is to indicate the costs of different types of maintenance work needed on the site. Secondly, to ensure that the contractor supplies the most qualified supervisors to inspect the existing systems and plants on the site.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (1, 2, 6, 9, 14, 19, 26, 28, 30, 31, 33, 34, 36-40).

And, it was partially covered in the documents of the tenth (10th) and thirteenth (13th) maintenance contract references only.

Finally, this issue was not included in the documents of the remaining maintenance contract references.

6. Operation Work Rate:

Under the maintenance contract, the contractor shall operate all site systems, plants, equipment and stations with the most qualified operators and

supervisors at all times. The contractor shall establish appropriate operating procedures to ensure that all assigned personnel are fully approved by the Ministry representative prior to their deployment on the site. The contractor shall submit an Operational Procedure Manual to the Ministry representative for approval within ten days of the notice to proceed with the contract work.

The following are the advantages to be achieved from incorporating this contractual issue in the maintenance contract:

- To ensure that the contractor shall be fully liable for the operations of the existing site systems and plants.
- To ensure that the contractor conducts the operation activities for all equipment and systems in accordance with the manufacturers recommendations for the operation, and in a manner which ensures the full operational capability of the building at all times.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (1, 2, 5, 9, 14, 19, 26, 34, 36-38).

And, it was partially covered in the documents of the following maintenance contract references (4, 6, 10, 13).

Finally, this issue was not included in the documents of the remaining contract references.

7. Emergency Work Rate:

The following are types of emergency work that might be requested by the Ministry during the course of the contract:

- Replacement work: This will include all the architectural, civil, mechanical and electrical works required by the Ministry representative to avoid the excessive running cost of repairs to the existing systems.
- Alternative work: Decisions relating to alterations are based on similar considerations to those which apply to replacement decisions. The Ministry may ask the contractor to perform any kind of alteration work to increase the value of the building, the effective use of the building and better appearance.

The following are the advantages to be achieved from considering this contractual issue in the maintenance contract:

- To ensure that the contractor complies with the Ministry representative's request to perform any additional work.
- These types of works provide to the Ministry significant savings, by amending the existing conditions within the permissible Ministry allocated annual budget.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (1, 2, 9, 14, 19, 26, 34, 36-38).

And, it was partially covered in the documents of the tenth (10th) and thirteenth (13th) maintenance contract references only.

Finally, this issue was not included in the documents of the remaining maintenance contract references.

8. Equipment and Tools Rate:

The contractor shall provide to the Ministry a schedule of all equipment and tools which are to be in very good operating condition and comply with the conditions and requirements stated in the contract. All equipment shall be kept in a clean and well maintained condition at all times to the satisfaction of the Ministry representative.

The following are the benefits to be achieved from considering this contractual issue in the maintenance contract:

- To specify the quantity and quality of equipment and tools to be supplied by the contractor.
- To ensure that equipment is registered with the appropriate agencies of the Saudi Arabian Government and any agency of the Ministry which requires registration.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (9, 11-14, 19, 26, 34, 36-38).

And, it was partially covered in the documents of the following maintenance contract references (1, 2, 6,10).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

9. Payment Procedure:

As for the full and complete compensation of the maintenance, the contractor's performance of services and all of the contractor obligations in accordance with the terms and conditions of this contract, the Ministry shall pay the contractor a contract price consisting of the following:

- Labor rates as specified in the contract labor schedules.
- Equipment rates as specified in the contract equipment schedules.
- Spare part rates as specified in the contract spare parts schedules.
- Maintenance and operation rates as specified in the maintenance and operation schedules.
- Emergency rates as specified in the emergency schedules.

The benefits to be achieved from considering this contractual issue in the maintenance contract is to inform the contractor of the method of payment procedure which apply in the Ministry. Secondly, the contractor shall be addressed to the preparation method of progress reports for the work completed during the preceding period.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (1, 2, 7, 8, 11-26, 28, 34-38).

And, it was partially covered in the documents of the third (3rd) and tenth (10th) maintenance contract references.

Finally, this issue was not included in the documents of the remaining maintenance contract references.

10. Penalty and Delay:

The Ministry may deduct from amounts which are payable to the contractor under this contract any amount which is payable to Ministry by the contractor under this or any other contract between them.

The benefits to be achieved from considering this contractual issue in the maintenance contract are as follows:

- To state the rules and regulations related to payments, imposed penalty and delay fines that will be applied to the contract.
- To ensure that the contractor is fully aware of the consequences of his negligence or failure to comply with any conditions and terms of the contract.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (1, 2, 7, 8, 11-15, 17-40).

And, it was partially covered in the documents of the following maintenance contract references (3, 5, 10,16).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

11. Consumed Materials Procedure:

The contractor shall be responsible for providing all equipment and personnel necessary to transport the consumed materials to the designated area according to the Ministry representative's instructions. All other materials at the work site which is considered to be useful to the Ministry, shall be loaded and transported by the contractor to the Ministry's reclamation yard.

The benefit to be achieved from considering this contractual issue in the maintenance contract is to ensure that the the contractor at any time; as directed by the Ministry representative, shall properly pack, identify and reload all the Ministry consumed material which is determined by the Ministry's representative to be reusable and shall transport such items to any Ministry designated location or locations.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (4, 9, 11-15, 17-22, 24-40).

And, it was partially covered in the documents of the sixth (6th) and sixteenth (16th) maintenance contract references only.

Finally, this issue was not included in the documents of the remaining maintenance contract references.

3.5 Fifth Document: Technical Specifications:

The specifications describe what is to be furnished and how it is to be installed, the drawings designate where it should be placed. Specifications are made up of words, they are descriptions of the quality of materials and equipment to be used on the contract and their application or installation.

The benefits to be achieved from considering this contractual issue in the maintenance contract are as follows.

- To ensure that the contractor knows exactly what is required of him on the work site.
- To provide for the contractor the necessary technical data needed for buildings, systems and equipment maintenance and operation.

1. Technical Specifications of Installed Systems:

The contractor shall be supplied with all the existing system specifications. This describes the quality of the system components, the method of installation and the standard of workmanship. The workmanship clauses explain precisely what is to be done and how, giving details of any constraints on the method of installation.

The following are the benefits to be achieved from considering this contractual issue in the maintenance contract:

- It provides a vital role in the maintenance contract.
- It describes in detail the work to be executed under the contract and the nature and quality of the workmanship.

- Adjectives such as "best" or "good" are clearly recognized through the particular quality stated in the specifications.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (1, 2, 6).

And, it was partially covered in the documents of the following maintenance contract references (16, 20, 34).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

2. List of Systems Manufacturers and Dealers:

The Ministry shall supply the contractor with a list of all manufacturers and dealers who are acceptable to use during the performance of the contract works. The list shows the manufactures and dealers name and current business address, including telex number, mailing address, and street address, if different from their mailing address.

The benefits to be achieved from considering this contractual issue in the maintenance contract is to ensure that the contractor is fully familiar with the systems and equipment manufacturers and dealers who may be needed in case of system repair or spare part requisition. Secondly, the contractor may be required by the Ministry to repair any system through their manufacturer or local dealers.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the second (2nd) maintenance contract reference only.

And, it was partially covered in the documents of the following maintenance contract references (16, 20, 34).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

3. Historical Background Data Banks:

Information handling and processing between the Ministry and the contractor, necessitates the need to develop a computerized communication's

system to provide the capabilities for storing and retrieving valuable data in maintenance and operations. New communications systems combine the use of a computer for up-to-date technical information, performance requirements and specifications. These systems and programs enable the development of an effective data bank containing maintenance, operations and performance specifications.

The following are benefits to be achieved for considering this contractual issue in the maintenance contract:

- Reduce errors in decision making by the contractor.
- Provide a historical base for the Ministry and the contractor.
- Timesaving data collection.
- To standardized the inputted information.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was not fully covered in any documents of the maintenance contract references.

And, it was partially covered in the documents of the following maintenance contract references (2, 16, 20, 34).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

4. **Owner and Previous Contractor Reporting and Communication Systems:**

The Ministry shall provide the contractor with the previous communication system which was adopted in the maintenance contract. This will help the contractor to generate the most suitable communication's system to accomplish the contract work and to respond to Ministry requests of repairs and maintenance in a reasonable period of time.

The benefits to be achieved from considering this contractual issue in the maintenance contract is to ensure that the contractor analyzes the steps and procedures used to develop the previous system. Secondly, the contractor will be able to specify the advantages and disadvantages which are

associated with previous systems and to develop an effective communication system.

A detailed investigation into the latest maintenance contract reveals, that this contractual issue was not included in any documents of the maintenance contract.

5. Additional Contract Documents:

The maintenance contract might include an additional document, such as a Schedule of Rates, Bulletins, Change Orders and Addenda. These documents are fully described in Chapter Two with their related technical information.

The benefits of considering this contractual issue in a maintenance contract is to provide the contractor with other needed documents to facilitate his work at the site. Secondly, to provide the contractor with a set of standardized formats that will be needed in case of contract modifications, such as Change Order Format.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was not fully covered in any documents of the maintenance contract references .

And, it was partially covered in the documents of the first (1st) maintenance contract reference.

Finally, this issue was not included in the documents of the remaining maintenance contract references.

6. Proclamation:

All proclamations and other forms of contracts between the contractor and the Ministry shall be in writing. Except as otherwise provided in the contract, all proclamation shall be sufficient when delivered in person or sent by telex, cable, or by certified or registered mail, to the appropriate address indicated in the contract.

The benefits to be achieved from considering this contractual issue in the maintenance contract is to ensure that all types of proclamations between contracted parties are received within a reasonable period of time to respond to the Ministry's requests.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the second (2nd) maintenance contract reference only.

And, it was not partially covered in any documents of the remaining maintenance contract references.

Finally, this issue was not included in the documents of the remaining maintenance contract references.

3.6 Sixth Document: Basic Contract Charter:

This document constitutes the basic agreement between the contractor and the Ministry for execution of the maintenance and operational work in accordance with the other contract documents. This document identifies the contract parties, the date of the contract, the contract price, the contractors basic commitment and the signature of the contract parties.

The following are the benefits to be achieved from including this document and its related contractual issues in the maintenance contract:

- It provides brief information about the maintenance contract, but it incorporates, by reference, the remaining parts of the contract.
- It presents to high management personnel of both parties the official obligations and responsibilities under the maintenance contract.

The following are the contractual issues of this document:

1. The Application of Government Procurement Laws and Regulations:

All public tenders in Saudi Arabia are subject to the Government Procurement Laws and Regulations which is, securing, regulating, controlling all purchases and procurement of government services, supplies and implementing its contract and work. It consists of a number of Articles that govern the procurement process, forms the framework of all maintenance and construction contracts conditions and administration.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (1-22, 25, 26, 28-40).

And, it was partially covered in the documents of the twenty seventh (27th) maintenance contract reference only.

Finally, this issue was not included in the documents of the remaining maintenance contract references.

2. Required Contract Work:

This is a brief statement to describe the basic contractor commitment to perform the required maintenance and operational work in accordance with the referenced specifications and conditions of the contract.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (1, 9-26, 28-40).

And, it was partially covered in the documents of the following maintenance contract references (2-8, 27).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

3. Location of the Work:

The contractor will be supplied with maps of the work site location and the surrounding environment which might impose certain restrictions to his performance of the contract.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (1-40).

And, it was not partially covered in any documents of the remaining maintenance contract references .

Finally, this issue was not included in the documents of the remaining maintenance contract references.

4. The Contract Duration:

As stated earlier, the contractor is required to perform the maintenance and operational work stated in the contract within a specific period of time. The contractor's failure to comply with the contract conditions and terms, within the period of the contract, might result in total or partial suspension of the contract.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (1-40).

And, it was not partially covered in any documents of the remaining maintenance contract references .

Finally, this issue was not included in the documents of the remaining contract references.

5. Contract Cost and Payment Procedure:

A general statement to demonstrate the total cost of the contract, as well as the related issue of payment procedures and the imposed delay fines and penalties.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (1-26, 34-40).

And, it was not partially covered in any documents of the remaining maintenance contract references.

Finally, this issue was not included in the documents of the remaining maintenance contract references.

6. Owner Representatives:

The Ministry representative for this contract shall be the Manager with full authority to direct the the contractor and to ensure that the contractor performs the work within contract terms and conditions.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (1, 2, 14-18, 20, 22-30, 33-35, 37-40).

And, it was partially covered in the documents of the following maintenance contract references (3-14, 21, 32).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

7. The Contractor Representative:

The contractor's representative, means a party or parties duly authorized by the contractor to act on behalf of the contractor, with whom the Ministry may consult at all times, and whose instructions, requests, and decisions issued or made as provided in this contract, shall be binding to the contractor.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (1-3, 10, 18, 20, 34).

And, it was partially covered in the documents of the following maintenance contract references (4-7, 9, 11-17, 19, 21).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

8. Prohibition of Contract Assignment:

The maintenance contract shall be binding upon, and ensure to the benefit of, the successors and assigns of the parties to this contract, however, this contract may neither be assigned nor transferred, either in whole or in part, by the contractor without first obtaining the written consent of the Ministry.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (1-10, 12, 16-18, 20, 22-31, 34).

And, it was partially covered in the documents of the following maintenance contract references (11, 13-15, 19, 21, 32, 33).

Finally, this issue was not included in the documents of the remaining maintenance contract references.

9. Owner and the Contractor Signature:

The Ministry and the contractor must assign an authorized representative to sign the contract which will bind both parties to perform their obligations.

A detailed investigation into the latest maintenance contract indicates, that this contractual issue was fully covered in the documents of the following maintenance contract references (1-31, 34-40).

And, it was partially covered in the documents of the following maintenance contract references (32, 33) only.

Finally, this issue was not included in the documents of the remaining maintenance contract references.

CHAPTER FOUR: STATISTICAL ANALYSIS OF THE GOVERNMENTAL MAINTENANCE CONTRACTS

4.1 Types of Maintenance Contracts:

The previous Chapter presented an overview of the types of Maintenance Contracts as well as the documents included in forty (40) maintenance contracts. This information will be translated to a numerical value to demonstrate the percentage of each type of maintenance contract that has been used in the surveyed governmental agencies (Table No. 4.0) (Figure No. 4.0).

4.2 Maintenance Contract Documents:

This part presents an evaluation of the contract documents and their related contractual issues included in the maintenance contracts. There are six (6) major documents which are listed with their relevant contractual issues, whereas all the governmental maintenance contracts were evaluated against these major documents. A fair comparison and evaluation of the following grades of classifications were adopted:

- **Fully Covered:** This grade has been assigned to the first degree of the document or its contractual issues which were considered as fully existent, explained and interpreted in the maintenance contract.
- **Partially Covered:** This grade has been assigned to the second degree of the document or its contractual issues which were considered as partially existent, explained and interpreted in the maintenance contract.
- **Not included:** This grade has been assigned to the document or its contractual issues absent in the surveyed maintenance contract.

Table No. (4.1, 4.2, 4.3, 4.4, 4.5 and 4.6) and Figure No. (4.1, 4.2, 4.3, 4.4, 4.5 and 4.6) present a statistical analysis of the maintenance contract documents and their related contractual issues.

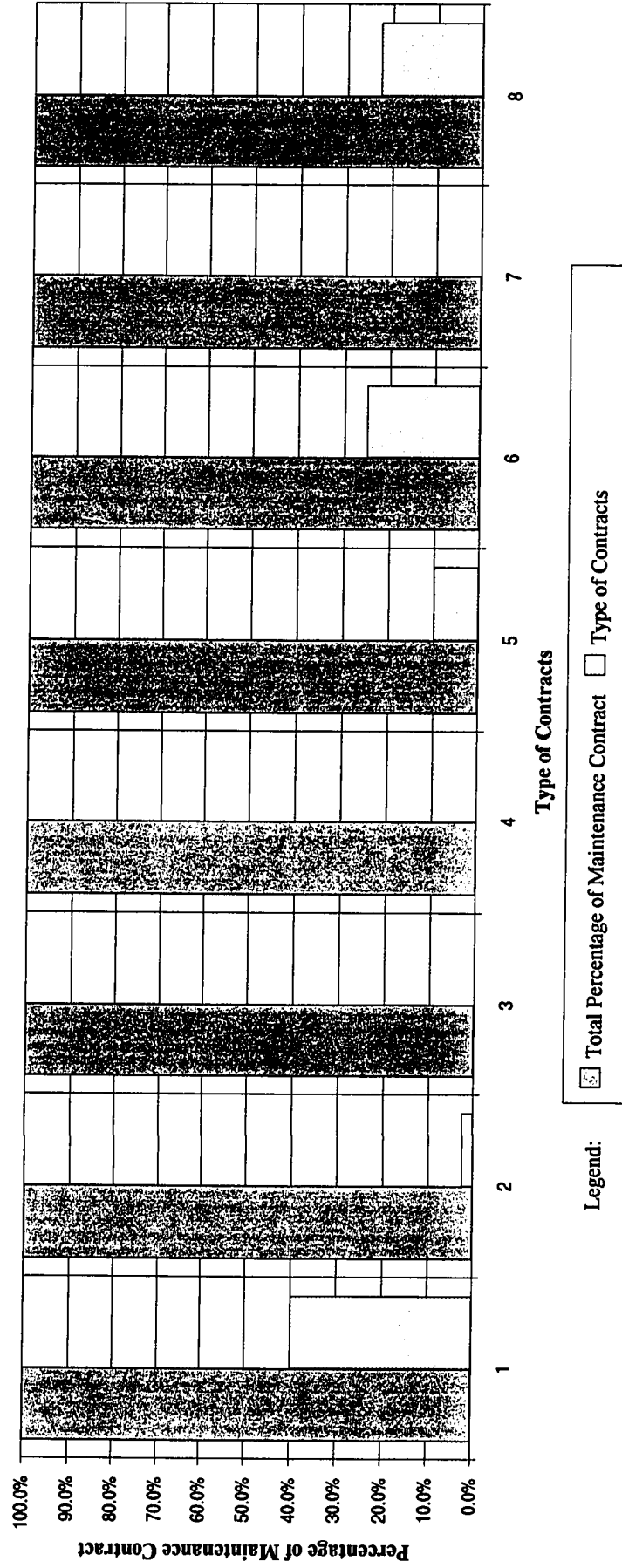
TABLE NO. 4.0 : TYPES OF MAINTENANCE CONTRACTS

GOVERNMENTAL AGENCIES	1 Fixed Price Contract	2 Cost Plus a Percentage Fee Contract	3 Cost Plus Fixed Fee Contract	4 Cost Plus Fixed Fee with Guaranteed Maximum Contract	5 Unit Price Contract	6 Term Contract	7 Schedule Contract	8 Purchased Labour Contract
1 Royal Air Defence Forces					●			
2 General Directorate of Military Works	●							
3 General Directorate of Passport						●		
4 General Directorate of Civil Defence	●							
5 General Directorate of Road Traffic	●							
6 Civil Affairs Authority	●							
7 Ministry of Pilgrimage								
8 Ministry of Commerce								●
9 Ministry of Municipal and Rural Affairs (Municipality of Makkah)	●							●
10 Ministry of Education		●						
11 Ministry of Petroleum and Mineral Resources	●							
12 Ministry of Work and Social Affair								
13 Ministry of Health- General Directorate of Health Affair in Tabuk Region	●							●
14 Ministry of Post, Telephone and Telegraph	●							
15 Ministry of Information						●		

GOVERNMENTAL AGENCIES	1 Fixed Price Contract	2 Cost Plus a Percentage Fee Contract	3 Cost Plus Fixed Fee Contract	4 Cost Plus Fixed Fee with Guaranteed Maximum Contract	5 Unit Price Contract	6 Term Contract	7 Schedule Contract	8 Purchased Labour Contract
16 Ministry of Industry and Electricity	●							
17 Ministry of Islamic Affairs Endowments Da'awa and Guidance						●		
18 Ministry of Justice								●
19 Ministry of Finance and National Economy	●							
20 The General Presidency of the Holy Mosque and Prophet Mosque						●		
21 Makkah Principality	●							
22 Real State Development Fund	●							
23 Makkah Education Department								
24 Saudi Arabian Oil Company - Saudi ARAMCO						●		
25 Saudi Consolidated Electricity Company in the Western Region					●			
26 General Cars Syndicate					●			
27 General Directorate of Saudi Airlines								●
28 Presidency of Girls Education								●
29 Muslim World League						●		
30 General Directorate of Drug Combat						●		

GOVERNMENTAL AGENCIES	1 Fixed Price Contract	2 Cost Plus a Percentage Fee Contract	3 Cost Plus Fixed Fee Contract	4 Cost Plus Fixed Fee with Guaranteed Maximum Contract	5 Unit Price Contract	6 Term Contract	7 Schedule Contract	8 Purchased Labour Contract
31 The Holy Makkah Police Station								●
32 General Presidency for the Protection of Virtue and Suppression of Vices								●
33 General Security Specialist Training Center	●							
34 National Guards Presidency	●							
35 The Observation and Investigation Authority								
36 Personnel Housing of Security Forces Hospital in Riyadh	●					●		
37 Personnel Housing of Security Forces in Tabuk	●							
38 Saudi Arabian Oil Company -Saudi ARAMCO					●			
39 The General Presidency of Holy Mosque and Prophet Mosque						●		
40 Ministry of Health-General Directorate of Health Affair in Al Maddenah Region								●
THE TOTAL OF MAINTENANCE CONTRACT TYPES = 40	16	1	0	0	4	10	0	9
THE PERCENTAGE OF EACH TYPE OF MAINTENANCE CONTRACT	40%	2.50%	0%	0%	10%	25%	0%	22.50%
RANK	1	5	6	6	4	2	6	3

FIGURE NO. 4.0: TYPES OF MAINTENANCE CONTRACTS IN THE GOVERNMENTAL AGENCIES IN SAUDI ARABIA



MAINTENANCE CONTRACT DOCUMENTS

TABLE NO. 4.1-FIRST DOCUMENT: GENERAL INSTRUCTIONS TO BIDDERS

GOVERNMENTAL OFFICES	TABLE NO. 4.1-FIRST DOCUMENT: GENERAL INSTRUCTIONS TO BIDDERS											
	1. Bid document package	2. Selection of Contractor	3. Foreign Contractors Regulations	4. Preparation of bids	5. Site visit requirements	6. Contract documents contradiction	7. Disqualified proposal	8. Qualification of prospective bidders	9. List of personnel and supervisors to perform the work	10. List of all equipment to be use in the contract	11. List of all suppliers and subcontractors	12. List of alternative materials and equipment
1				■								
2	●	●	●	●	●	■	■	●	●	■	●	■
3					●				●		■	●
4									●	■		
5					●			●	●	■		
6									●	●		
7					●			●	●	●	■	
8									●	●		
9	●							●	●	●		
10		●			●	●		●				
11		●			●	●		●		●	●	●
12	●	●		●	●							
13	●	●		●	●				●	●	●	●
14	●	●		●	●				●	●	●	●
15	■				■	■			■	■	■	■
16				●		●			■	■	■	■
17	●				●		●	●	●	●	●	●
18	●				●		●	●	●	●	●	●
19	●				●				●	●	●	●
20	●				●							
21	●				●							
22	●	●	●	●	●	●	●	●	●	■	■	■
23	●				●							
24	●			●	●							
25	●			●	●							
26	●			●	●							
27					●							
28	●	●	●	●				●	●	●	●	●
29	●	●	●	●					●			

TABLE NO. 4.1-FIRST DOCUMENT: GENERAL INSTRUCTIONS TO BIDDERS						
GOVERNMENTAL OFFICES	13. Preliminary guarantee (bid bond)	14. Bid Reservations list	15. Site visit and other required certificates	16. Bid presentation letter	17. Bidder's previous experience in performing similar or comparable work.	
1				●		
2	●	●	●	●		
3	●		●	●		
4	●			●		
5	●			●		
6	●			●		
7	●		●	●	●	
8	●			●		
9			●	●	●	
10	●	●		●		
11	●	●		●		
12	●		●			
13	●	●	●	●	●	
14	●	●	●	●	●	
15	■		■	■	●	
16	■	●	●		●	
17	●	●	●	●	●	
18	●	●	●	●	●	
19	●	●	●	●	●	
20				●	●	
21				●	●	
22	■	■	■	●	●	
23						
24				●	●	
25				●	●	
26				●	●	
27				●	●	
28	●	●	●	●	●	
29	●				●	

GOVERNMENTAL OFFICES	TABLE NO. 4.1-FIRST DOCUMENT: GENERAL INSTRUCTIONS TO BIDDERS											
	1. Bid document package	2. Selection of Contractor	3. Foreign Contractors Regulations	4. Preparation of bids	5. Site visit requirements	6. Contract documents contradiction	7. Disqualified proposal	8. Qualification of prospective bidders	9. List of personnel and supervisors to perform the work	10. List of all equipment to be use in the contract	11. List of all suppliers and subcontractors	12. List of alternative materials and equipment
30	●	●	●	●					●			
31	●	●	●	●								
32	●	●	●	●	●	●			●			
33	●	●	●	●	●	●			●			
34	●	●	●	●	●	●	●	●	●	●	●	●
35	●	●	●	●	●							
36	●	●	●	●					●			
37	●	●	●	●								
38	●	●	●	●		●			●			
39	●	●	●	●		●						
40	●	●	●	●		●			●			
●	28	20	15	22	24	10	4	11	23	12	9	9
■	1	0	0	1	1	2	1	0	2	6	5	4
	11	20	25	17	15	28	35	29	15	22	26	27
% ●	70%	50%	37.5%	55%	60%	25%	10%	27.5%	57.5%	30%	22.5%	22.5%
% ■	2.5%	0%	0%	2.5%	2.5%	5%	2.5%	0%	5%	15%	12.5%	10%
% □	27.5%	50%	62.5%	42.5%	37.5%	70%	87.5%	72.5%	37.5%	55%	65%	67.5%

LEGEND:

● Fully Covered

■ Partially Covered

□ Not Included

% ● Percentage of Totally Covered

% ■ Percentage of Partially Covered

% □ Percentage of Not Included

GOVERNMENTAL OFFICES	TABLE NO. 4.1-FIRST DOCUMENT: GENERAL INSTRUCTIONS TO BIDDERS					
	13. Preliminary guarantee (bid bond)	14. Bidders Reservations list	15. Site visit and other required certificates	16. Bid presentation letter	17. Bidder's previous experience in performing similar or comparable work.	
30	●				●	
31						
32					●	
33	■				●	
34	●	●	●	●	●	
35	●				●	
36	●				●	
37	●				●	
38	●				●	
39					●	
40	●				●	
●	24	11	13	25	28	
■	4	1	2	1	0	
	12	28	25	14	12	
% ●	60%	27.5%	32.5%	62.5%	70%	
% ■	10%	2.5%	5%	2.5%	0%	
%	30%	70%	62.5%	35%	30%	
LEGEND: ● Fully Covered ■ Partially Covered □ Not Included % ● Percentage of Totally Covered % ■ Percentage of Partially Covered % □ Percentage of Not Included						

FIGURE NO. 4.1 - FIRST DOCUMENT: GENERAL INSTRUCTIONS TO BIDDERS

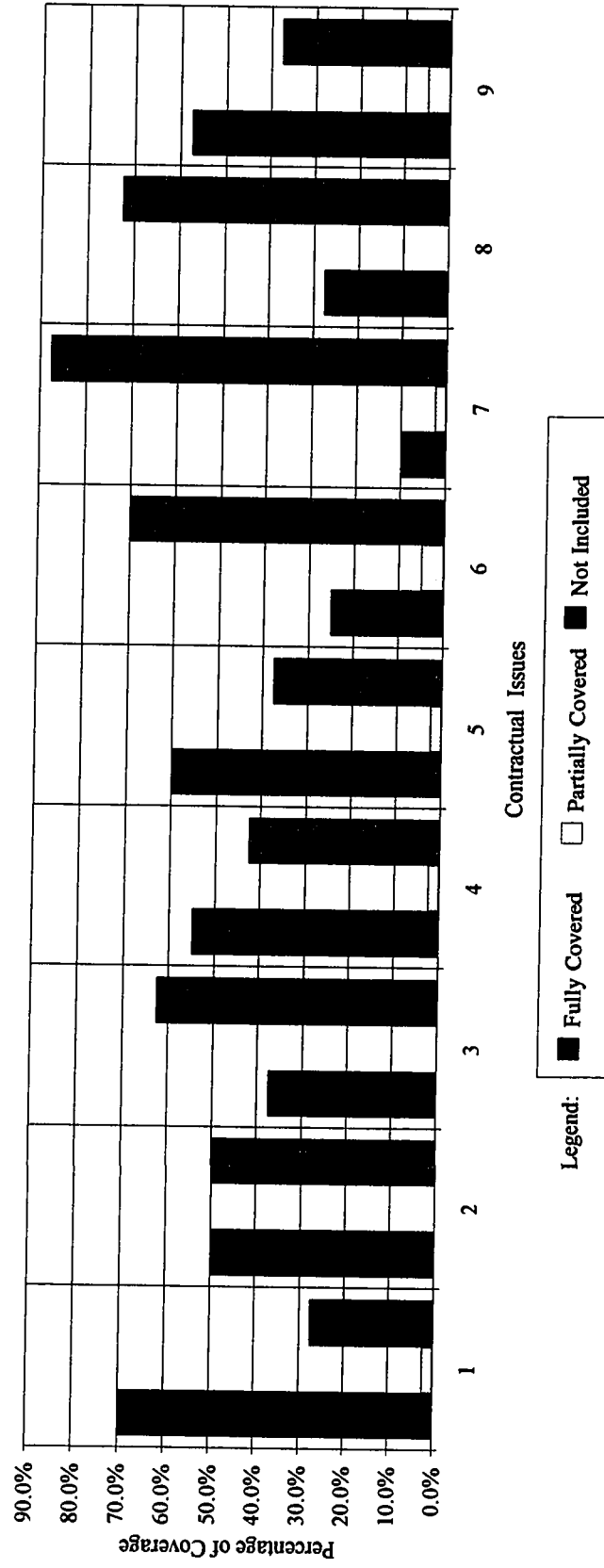
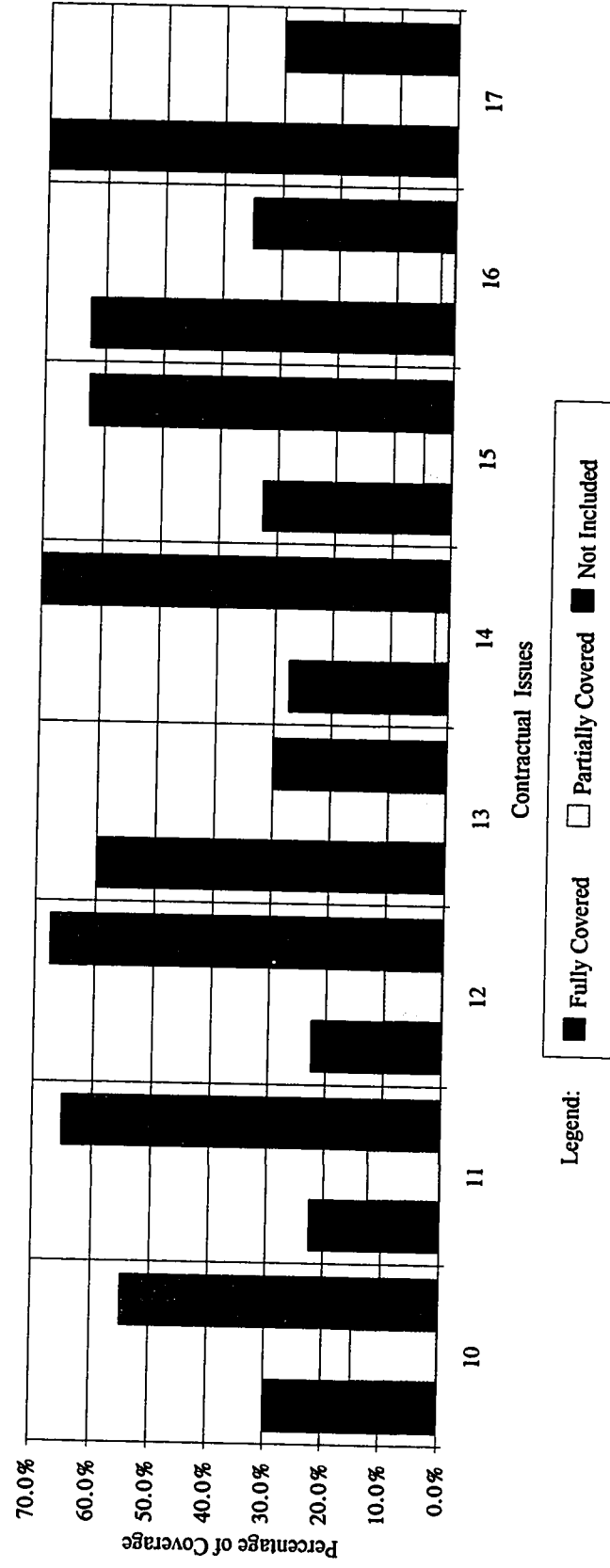


FIGURE NO. 4.1 - FIRST DOCUMENT: GENERAL INSTRUCTIONS TO BIDDERS



GOVERNMENTAL OFFICES		TABLE NO. 4.2 - SECOND DOCUMENT: GENERAL CONDITIONS																	
		1. Definitions	2. Single and Plural Utterance	3. Major Title and Marginal Titles	4. Documents Interpret Each Other	5. Site Visit Inspection	6. Advance and Progress Payments	7. Final Guarantee	8. Pre-starting Conference	9. Site Hand-over	10. Sites Utilities Usage	11. Contractor Manager or his Representative Authority	12. The Contractor's Communication with the Owner	13. Other Contracts in the Site	14. Supervision, Personnel and Language	15. Compliance with the Kingdom laws, rules, customs and traditions	16. Responsibilities, Permits and Licenses		
1		●						●											
2		●	●	●	■	●	●	●	■	■	■	■	■	■		●			
3							●	●		■		■							
4					■		■	●		■						●			
5					●	●	■	●		■			●		●	●			
6							●	●		■					●				
7						■	●	●		■		●	●		●				
8							●	●		●				■	■	●			
9		●	●				●	●		●		●			●	●			
10		■	●	●	●	●	■	■			■	■			●	●			
11		●	●	●	●	●	●	●		●					●				
12		●	●	●	●	●	●	●				●			●				
13		●			●	●	●	●	●	■		●			●	●		●	
14		●			●	●	●	●				●			●	■			
15					●	●	●	●		■		■				■			
16					●	●	●	●		■						■			
17					●	●	●	●		●					●	■			
18					●	●	●	●		●						■			
19					●	●		■		■						■			
20					●	●	●	●		●						●			
21					●	●	●	●		■						●			
22		●	●	●	●	●	●	●	●	●	●				●				
23					●	●	●			●	●	●							
24		●	●	●	●	●	●	●	●	■	■	●			●				
25		●	●	●	●		●	●	●	●					●				
26					●	■	■	■				■			■			■	
27					●	●	●	●											
28					■	■	■	■											
29					●	●	●	●											

GOVERNMENTAL OFFICES	TABLE NO. 4.2 - SECOND DOCUMENT: GENERAL CONDITIONS															
	17. Taxes and Dues	18. Contractor Vehicle Identification	19. Sub-contracting Contracts	20. Contract Scope of Work	21. Rehabilitation Work	22. Work Approval	23. Work Progress, Penalty and Delay	24. Owner Supervisors	25. Incident Precautions and Compliance with Safety Measures	26. The Provision of Required Equipment, Materials, and Other Installations	27. Materials and Personnel	28. Contract Duration	29. Termination at Owner Convenience	30. Suspension of Work	31. Changes and Contract Modification	32. Obligations upon Suspension or Termination
1			●	■			●			■	●	●	●		■	
2	●		●		●	●		●	■		●	●	■		■	■
3		■		■		●		●	■	■	●	●				
4	●			■		●	■	●	■	■	●	●	●	■	■	■
5						●	■	●		●	●	●	■			
6				■	●	●		●		●	●	●			●	
7	●					●		●		●	●	●				
8						●		●		●	●	●	●	●	●	
9	■		●	●		●	■	●			●	●	■	●	■	■
10	●		●	●		●	■	●	■	■	●	●	■	■	●	■
11	●		●	●			●	●			●	●	●	●	●	●
12	●		●	●			●			●	●	●				
13	●		●	●			●	●			●	●	●	■	■	
14	■		●	●			●	●		■	●	●	●	■	■	
15	■		●	●			●	●		■	●	●	●	●	●	●
16	●		●	●			●	●		■	●	●	●	●	●	●
17	■		●	●			●	●		■	●	●				
18	■		●	●			●	●		■	●	●	●	●	●	●
19	■		●	●			●	●		■	●	●			●	
20			●	●			●	●		●	●	●	●	●	●	●
21			●	●			●	■		●	●	●				
22			●			●	●	■			●	●	●	●	●	●
23	●							■		●	●	●	●	●	●	●
24	●		●	●				●		●	●	●	●	●	●	●
25								■		●	●	●	●	●	●	●
26				●				■		●	●	●				
27	●			■							●	●	■	■	■	■
28			■	■							■	●	■	■	■	■
29				●				●			●	●				

	GOVERNMENTAL OFFICES	TABLE NO. 4.2 - SECOND DOCUMENT: GENERAL CONDITIONS														
		33. Dispute Settlement	34. Sham and Swindle	35. Notices	36. The Contractor Commission to Obtain the Contract	37. Bribe and Similar Attitudes	38. Site Fossil and Heritage	39. Calendar	40. Working Hours	41. Environmental Protection	42. The Ownership of Invention	43. Contract Laws	44. Operational Locations and Storing	45. Contractor Equipment, Supplies and Tools	46. The Use of Local Transportation and Loading System	47. The Use of Local Insurance, Banking, Real Estate and Catering Services
1	■											■				
2		●	●	●	●	●	●	■	■	●	●	■	■	■	■	■
3	●								■					■		
4									●			■			■	■
5	■								●			●		■	●	●
6					●				■					●	■	■
7					●				■					●	■	■
8	●	●	●	●	●	●			●			●		●	●	●
9	■	■	●	●	●	■	■	■	■		●	■			●	●
10	■		●	●	●	■	■	■	■	●	●	■		■	●	●
11	●		●	●	●				■			●			●	●
12			●						■					■	●	●
13	●								■			●		●	●	●
14			●						■			■		●	■	■
15									■					●	●	●
16	●							●	●			●		●	●	●
17									●			■		■	●	●
18									●			■		■	●	●
19												■		■	■	■
20												●		●	●	●
21	●		●	●	●							●		●	■	■
22	●								●			●		●	■	■
23												●		●	■	■
24	●	●	●	●	●	●	●	■	●	■	■	●	●	●	●	●
25	●	●	●									●	●			
26	■								■			■				
27	●											■				
28	●								■			■			■	■
29	●							●	●			●			●	●

GOVERNMENTAL OFFICES	TABLE NO. 4.2 - SECOND DOCUMENT: GENERAL CONDITIONS							
	48. Identification Tags	49. Accommodations of Contractor Personnel	50. Site Office Requirements	51. Advance Payment (Standard Form)	52. Final Guarantee (Standard Form)	53. Progress Certificate (Standard Form)	54. Periodical Invoicing Payment (Standard Form)	55. Undertaking Certificate (Standard Form)
1			●					
2	●	●	●	●	●	■	■	■
3								
4								
5	■	■						●
6	■							
7		■						
8	■	■						●
9								
10	■	●	■					
11	●							
12								
13								●
14			■					
15		●					●	
16		●	●					
17	■							
18	■							
19		■	■					
20	■					■		
21								
22	■		●					
23	●							
24	●	●	●	●	●	●	●	●
25								
26								
27								
28		■						
29		●						

GOVERNMENTAL OFFICES	1. Definitions	2. Single and Plural Utterance	3. Major Title and Marginal Titles	4. Documents Interpret Each Other	5. Site Visit Inspection	6. Advance and Progress Payments	7. Final Guarantee	8. Pre-starting Conference	9. Site Hand-over	10. Sites Utilities Usage	11. Contractor Manager or his Representative Authority	12. The Contractor's Communication with the Owner	13. Other Contracts in the Site	14. Supervision, Personnel and Language	15. Compliance with the Kingdom laws, rules, customs and traditions	16. Responsibilities, Permits and Licenses
30				●	●	●	●									
31				●	●	●	●				●					
32				●	●	●	●				●					
33				●	●	●	●				●					
34	●	●		●	●	●	●	●		●	●			●		●
35	●			●	●					●				●		
36	●	●	●	●	●		●	●	●	●				●		
37	●	●	●	●	●		●	●	●	●				●		
38	●	●	●	●	●	●	●	●	●	●	■	■	■	●	■	■
39	●		●		●		●	●		●		●		●		■
40	●			●		●	●		●		●		●		●	
●	17	12	11	30	29	29	34	9	13	8	12	3	1	20	11	2
■	1	0	0	3	3	5	4	1	12	3	6	2	3	2	7	3
	22	28	29	7	8	6	2	30	15	29	22	35	36	18	22	35
% ●	42.5%	30%	27.5%	75%	72.5%	72.5%	85%	22.5%	32.5%	20%	30%	7.5%	2.5%	50%	27.5%	5%
% ■	2.5%	0%	0%	7.5%	7.5%	12.5%	10%	2.5%	30%	7.5%	15%	5%	7.5%	5%	17.5%	7.5%
%	55%	70%	72.5%	17.5%	20%	15%	5%	75%	37.5%	72.5%	55%	87.5%	90%	45%	55%	87.5%

LEGEND:

- Fully Covered
- Partially Covered
- Not Included
- % ● Percentage of Totally Covered
- % ■ Percentage of Partially Covered
- % □ Percentage of Not Included

GOVERNMENTAL OFFICES																
	17. Taxes and Dues	18. Contractor Vehicle Identification	19. Sub-contracting Contracts	20. Contract Scope of Work	21. Rehabilitation Work	22. Work Approval	23. Work Progress, Penalty and Delay	24. Owner Supervisors	25. Incident Precautions and Compliance with Safety Measures	26. The Provision of Required Equipment, Materials, and Other Installations	27. Materials and Personnel	28. Contract Duration	29. Termination at Owner Convenience	30. Suspension of Work	31. Changes and Contract Modification	32. Obligations upon Suspension or Termination
30				●				●			●	●				
31			●	●							●	●			●	
32				●									●	●		●
33			●	●							●	●	■	■	■	■
34			●	●				●			●	●	●	●	●	●
35				●				●			●	●	●			
36			●	●				●			●	●	●	●	●	●
37				●				●			●	●	●	●	●	●
38	■	●	●	●				●			●	●	●	●	●	■
39											●	●	●	●	●	●
40	■	■									●	●	●	●	●	●
●	11	1	22	25	2	10	13	26	0	11	38	39	22	18	20	15
■	8	2	1	6	0	0	4	5	4	10	1	0	7	7	9	8
	21	37	17	9	38	30	23	9	36	19	1	1	11	15	11	17
% ●	27.5%	2.5%	55%	62.5%	5%	25%	32.5%	65%	0%	27.5%	95%	97.5%	55%	45%	50%	37.5%
% ■	20%	5%	2.5%	15%	0%	0%	10%	12.5%	10%	25%	2.5%	0%	17.5%	17.5%	22.5%	20%
% □	52.5%	92.5%	42.5%	22.5%	95%	75%	57.5%	22.5%	90%	47.5%	2.5%	2.5%	27.5%	37.5%	27.5%	42.5%

LEGEND:

● Fully Covered

■ Partially Covered

□ Not Included

% ● Percentage of Totally Covered

% ■ Percentage of Partially Covered

% □ Percentage of Not Included

	GOVERNMENTAL OFFICES														
	33. Dispute Settlement	34. Sham and Swindle	35. Notices	36. The Contractor Commission to Obtain the Contract	37. Bribe and Similar Attitudes	38. Site Fossil and Heritage	39. Calendar	40. Working Hours	41. Environmental Protection	42. The Ownership of Invention	43. Contract Laws	44. Operational Locations and Storing	45. Contractor Equipment, Supplies and Tools	46. The Use of Local Transportation and Loading System	47. The Use of Local Insurance, Banking, Real Estate and Catering Services
30	●						●	●						●	●
31	●							●							
32		●	●	●				■							
33	■	■	■	■				■						●	●
34	●	●	●	●	■	■	■	●	■	■	■	■	■	●	●
35															
36	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
37	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
38	■	■	■	■	■	■	■		■	●	●	●	●	●	●
39	●	●	●	●	●	●	●	●							
40	●	●	●	●	●	●	●	●						●	●
●	19	10	15	15	7	6	7	16	4	5	15	5	15	21	21
■	7	3	2	2	3	3	5	15	3	2	13	2	9	10	10
	14	27	23	23	30	31	28	9	33	33	12	33	16	9	9
% ●	47.5%	25%	37.5%	37.5%	17.5%	15%	17.5%	40%	10%	12.5%	37.5%	12.5%	37.5%	52.5%	52.5%
% ■	17.5%	7.5%	5%	5%	7.5%	7.5%	12.5%	37.5%	7.5%	5%	32.5%	5%	22.5%	25%	25%
% □	35%	67.5%	57.5%	57.5%	75%	77.5%	70%	22.5%	82.5%	82.5%	30%	82.5%	40%	22.5%	22.5%
<p>LEGEND:</p> <p>● Fully Covered</p> <p>■ Partially Covered</p> <p>□ Not Included</p> <p>% ● Percentage of Totally Covered</p> <p>% ■ Percentage of Partially Covered</p> <p>% □ Percentage of Not Included</p>															

GOVERNMENTAL OFFICES	48. Identification Tags	49. Accommodations of Contractor Personnel	50. Site Office Requirements	51. Advance Payment (Standard Form)	52. Final Guarantee (Standard Form)	53. Progress Certificate (Standard Form)	54. Periodical Invoicing Payment (Standard Form)	55. Undertaking Certificate (Standard Form)	
30									
31									
32									
33									
34	●	●	●	●	●	●	●	●	
35								●	
36	●							●	
37	●							●	
38	●	■						■	
39		●			●		●		
40		●				●		●	
●	8	9	6	3	4	3	4	9	
■	8	6	3	0	0	2	1	2	
	24	25	31	37	36	35	35	29	
% ●	20%	22.5%	15%	7.5%	10%	7.5%	10%	22.5%	
% ■	20%	15%	7.5%	0%	0%	5%	2.5%	5%	
% □	60%	62.5%	77.5%	92.5%	90%	87.5%	87.5%	72.5%	
<p>LEGEND:</p> <p>● Fully Covered</p> <p>■ Partially Covered</p> <p>□ Not Included</p> <p>% ● Percentage of Totally Covered</p> <p>% ■ Percentage of Partially Covered</p> <p>% □ Percentage of Not Included</p>									

FIGURE NO. 4.2- SECOND DOCUMENT: GENERAL CONDITIONS

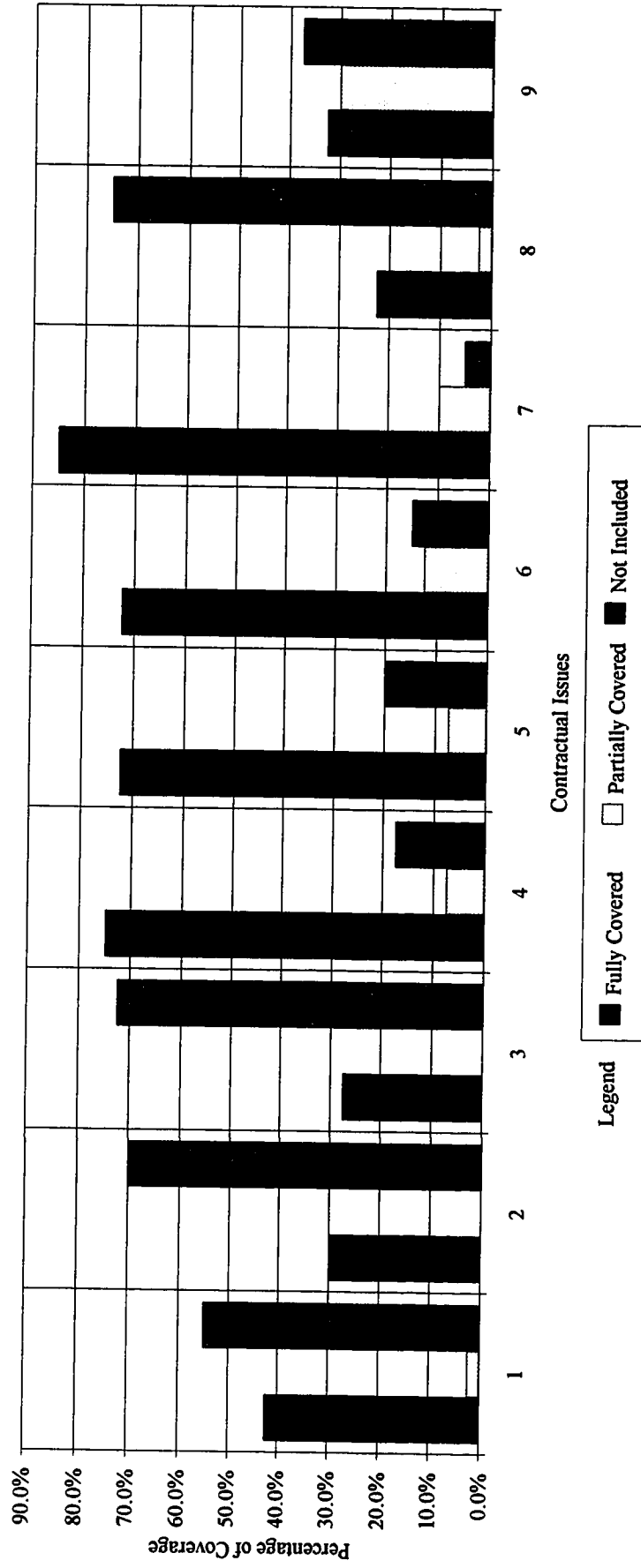


FIGURE NO. 4.2 - SECOND DOCUMENT: GENERAL CONDITIONS

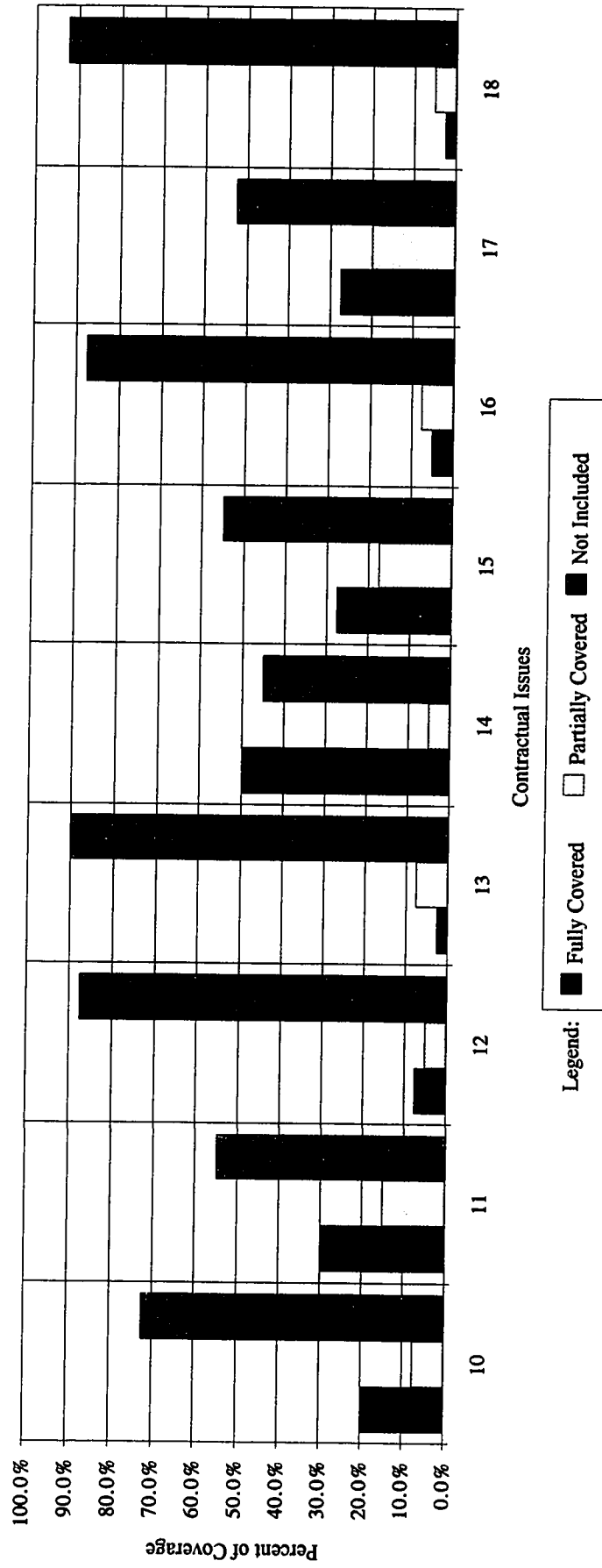


FIGURE NO. 4.2 - SECOND DOCUMENT: GENERAL CONDITIONS

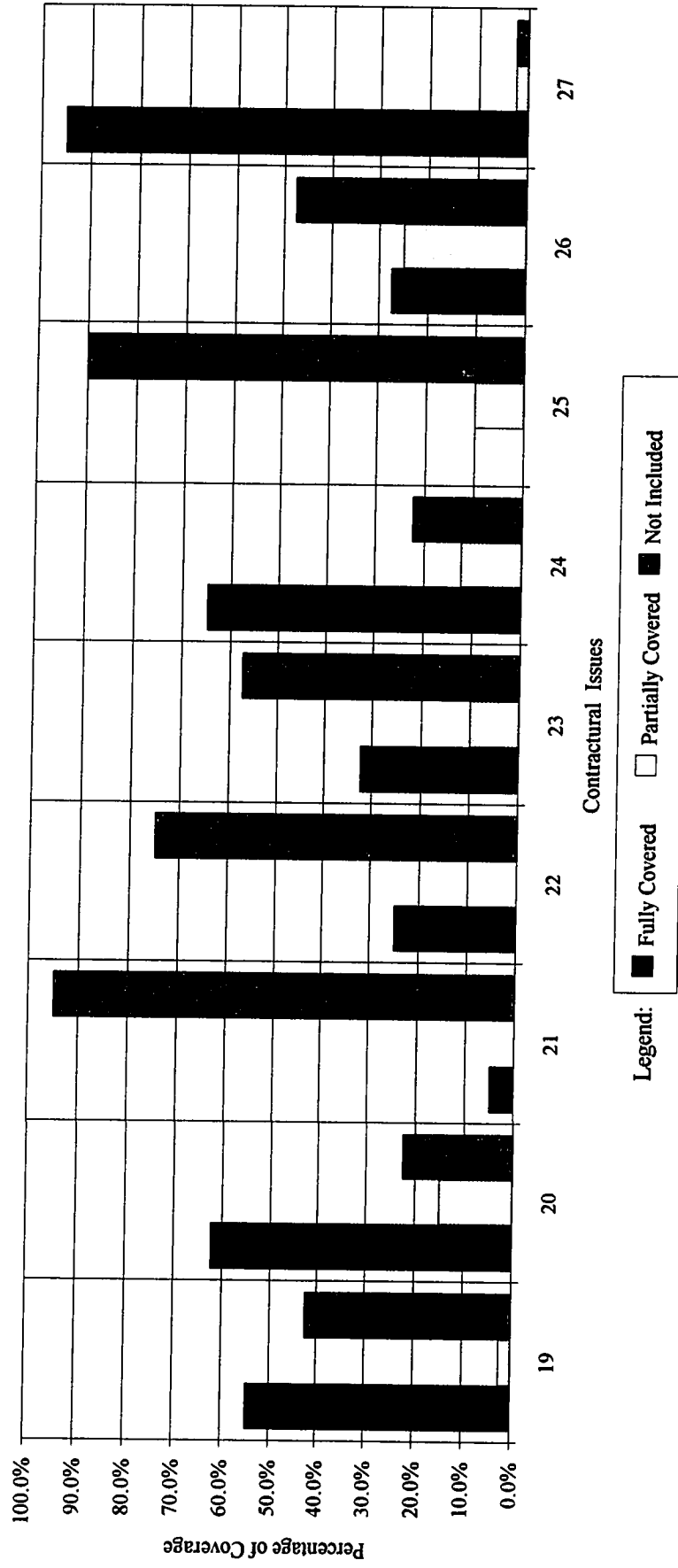


FIGURE NO. 4.2 - SECOND DOCUMENT: GENERAL CONDITIONS

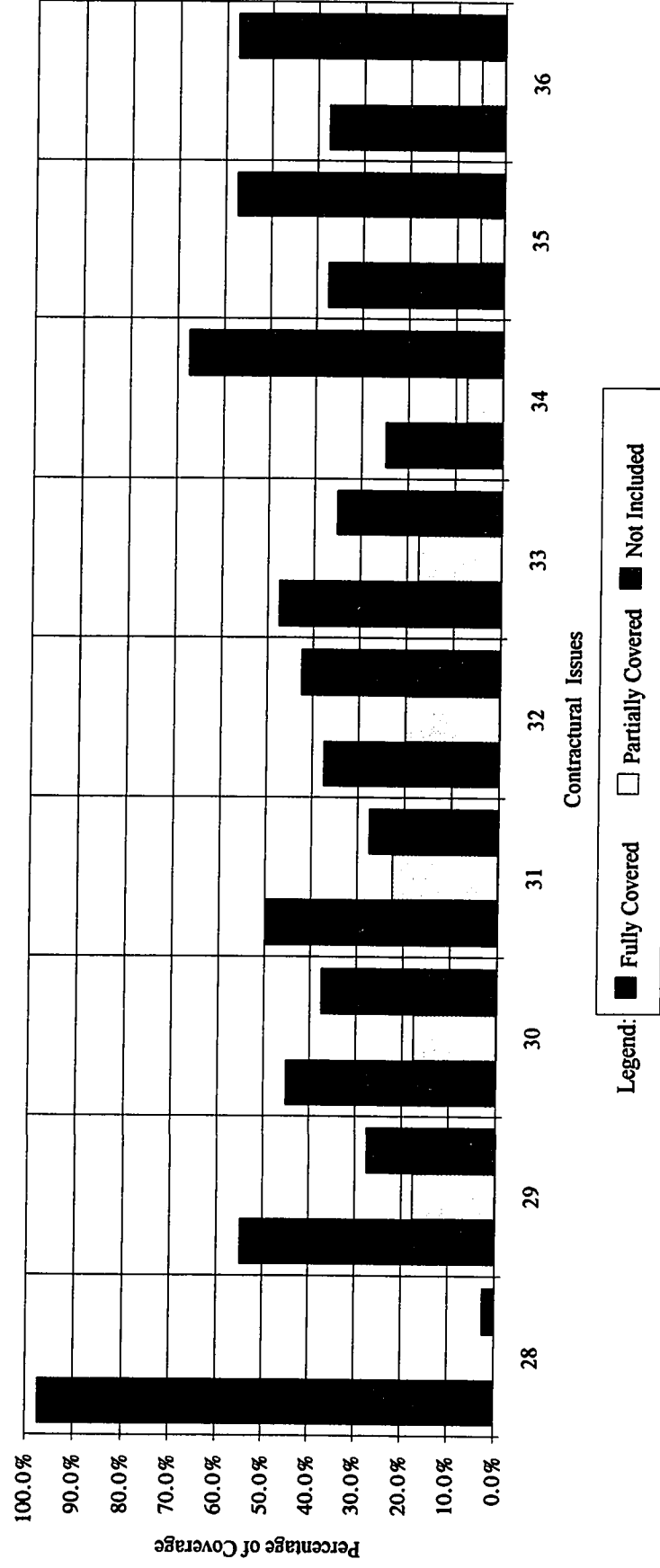


FIGURE NO. 4.2 - SECOND DOCUMENT: GENERAL CONDITIONS

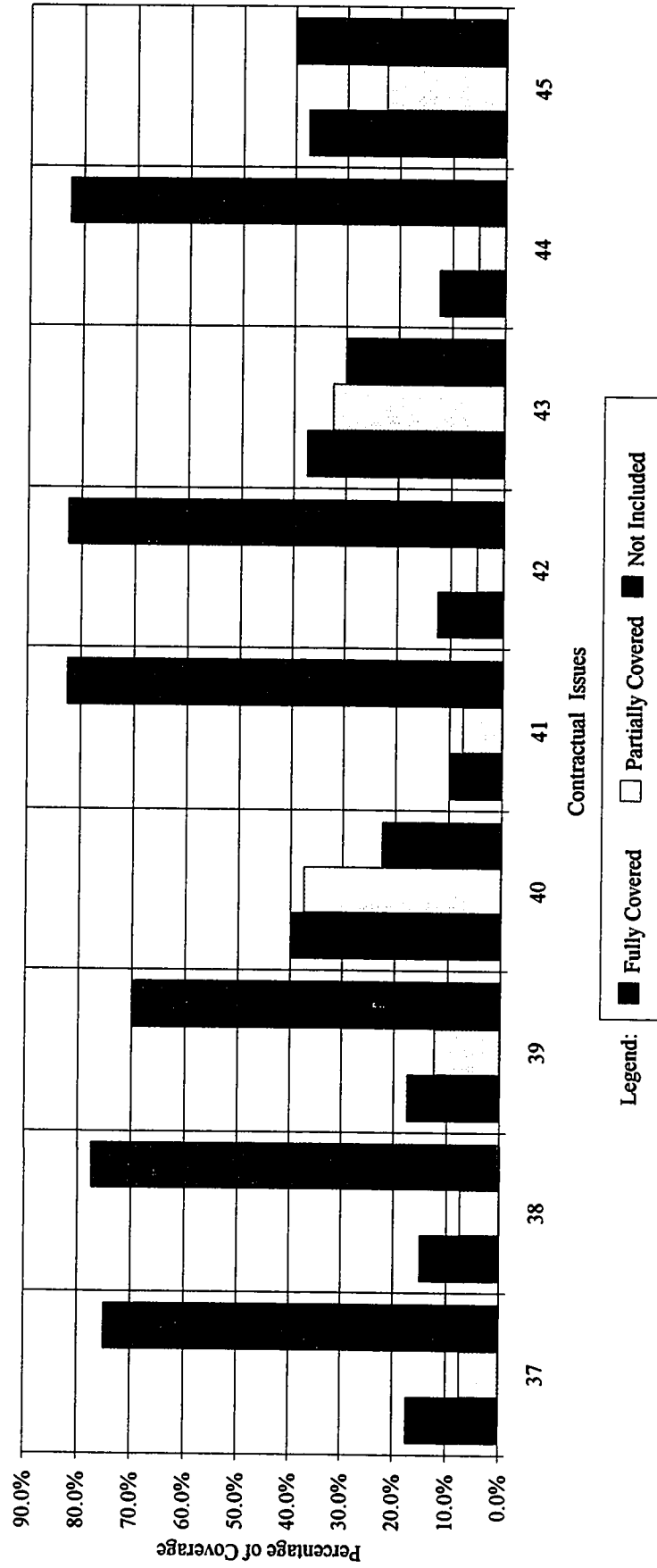
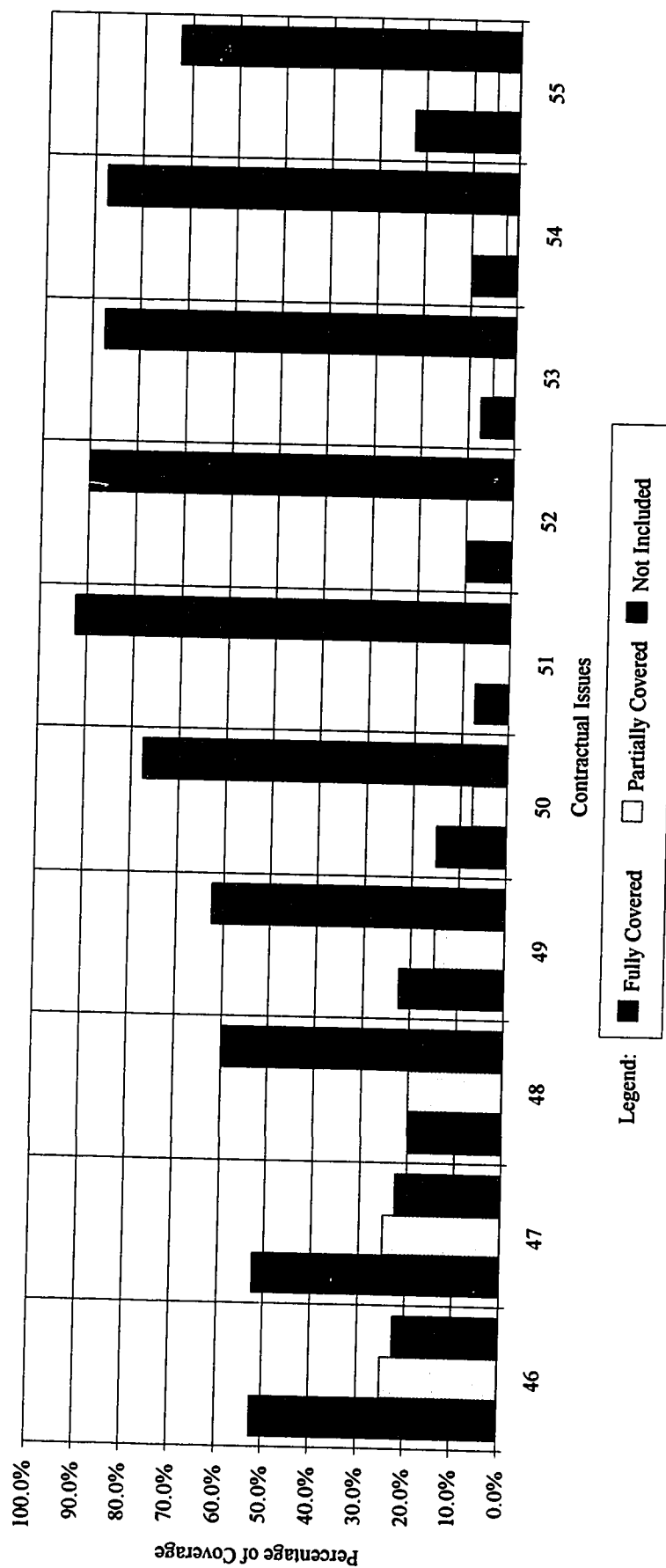


FIGURE NO. 4.2 - SECOND DOCUMENT: GENERAL CONDITIONS



GOVERNMENTAL OFFICES	TABLE NO. 4.3-THIRD DOCUMENT:SPECIFIC CONDITIONS AND SCOPE OF WORKS															
	1. General	1.1 General Requirements	1.2 Basic Requirements	1.3 Site Components Description	1.4 Contract Technical Terminologies	1.5 Performance Terminologies	1.6 Volume of the Required Work	1.7 Required Consultation and Engineering Experience	1.8 Fuel and Oil Consumption	2. Organization and Contractor Personnel	2.1 Personnel Identification Tags	2.2 The Contractor's Personnel Uniforms	2.3 The Contractor's Personnel Appearance and Attitude	2.4 The Contractor's Personnel Training	2.5 The Contractor's Personal Medical Fitnesses	3. Administration Affairs
1							■									
2	■	■	●	●	■	■	●	●		●	■	■	●	●		●
3		●		●												
4		■		●			■									
5		●		●		■				●					●	
6		●		■												■
7		■		■							●	●	●			■
8		■		●												
9		■		●		■				●	●	●	●	●	●	■
10	■	■		●		■	●			■	●	●	●	●	●	
11		■		■						●	●	●	●	●		●
12		■		■		■	■			●	●	●	●	●		
13		■		■		■				●	●	●	●	●	●	
14				■						●	●	●	●	●	●	●
15				■				●		■	■	●	■	■		
16	■	■		■						■	■	■	■	■	■	
17										●	●	●	■	■	■	
18										●	●	●	●	●	●	
19										■	■	■	■	●	●	
20										●	●	●	●	●	●	●
21										■	■	■	■	■	■	■
22				●						●	■	●	●	●	●	●
23										●	●	●	●	●	●	●
24	●	●	■	●	■		●	●		●	●	●	●	●	●	●
25										■	■	■	■	●	●	●
26										●	●	●	●	●	●	●
27								●		■	■	■	■	■	■	■
28										●						
29				■						●						

GOVERNMENTAL OFFICES	TABLE NO. 4.3-THIRD DOCUMENT:SPECIFIC CONDITIONS AND SCOPE OF WORKS															
	3.1 Administrative Procedure	3.2 The Contractor's Personnel Management	3.3 Computerized Management System	4. Procurement and Supply	4.1 Elementary Requirement	4.2 Continuous Requirement	4.3 Replacement Procedures	4.4 Scrap and Obsolete Items Destruction	5. Quality Control and Quality Assurance	5.1 Quality Control and Quality Assurance Objectives	5.2 Quality Control and Quality Assurance Personnel	5.3 Quality Control Quality Assurance Program	6. Safety Measures and Fire Protection	7. Maintenance Work	7.1 Planned Maintenance	7.2 Preventive Maintenance
1			●											●	■	■
2	●	●	■	■					■	■	●	●	●	■	■	■
3		●			●	●										
4		●		■	■		■			■						
5		●		■						■			●	●		
6		■			●	●		●			■			●	■	■
7		●		●						●				●	●	●
8	■	■		■		●		●			■			●	■	■
9		■		■				■		●	■			●	■	■
10		■		■						■	■			●	■	■
11	●	●		■		■					■			●		■
12		●		■										●		
13		●		●			●	●	●	●		■		■	■	■
14	●	●												●	●	●
15		●		■									●	■	■	■
16		●		■					■	■	■			●	●	●
17		●		■					■	■				■	■	■
18		●		■					■	■	■			●	●	●
19		●		■					■	■	■	■		●	■	■
20		●		■										●	●	●
21		●		■										■	●	●
22		●		●										●		
23										■	■	■	■	●		
24	■	■		■				■	■	■	■	●	●	●	●	●
25	●	■								●	●	●	●	●		
26	●									●	●	●	■	●		
27	■	■								●			●	●		
28		●												●		
29														●		

GOVERNMENTAL OFFICES	TABLE NO. 4.3-THIRD DOCUMENT:SPECIFIC CONDITIONS AND SCOPE OF WORKS														
	7.3 Emergency Maintenance	7.4 Maintenance of Supporting Equipment and Services	7.5 List of Buildings to be Maintained	7.6 List of Electrical Sytem to be Maintained	7.7 List of Telephone Systems to be Maintained	7.8 Water Systems and Pumps Maintenance	7.9 Fuel Station and Fuel Tank Maintenance	7.10 Sanitation, Landscaping and Irrigation System Maintenance	7.11 Mechanical System Maintenance	7.12 Fire Alarm and Other Electronic System Maintenance	8. Installed System Operation on the Site	9. Janitorial Work	9.1 Daily Janitorial Work	9.2 Weekly Janitorial Work	9.3 Monthly Janitorial Work
1	■	■	●	●	●	●	●	●	●	●	●	●	■	■	■
2	●	■	■	■	■	■	■	●	■	■	■	■	●	●	●
3			●	●				●	●			●	■	■	■
4															
5	●		●	●		●		●				●	●	●	●
6	■	■	●	●		●		●	●	●		●	■	■	■
7	●		●			●						●	●	●	●
8	■		●					●				●	●	●	●
9	■		●	●	●	●	●	●	●	●	●	●	●	●	●
10	■		■	●	●	●	●	●				●	●	●	●
11			●	●	●	●	●	●				●			
12			●	●	●	●	●	●		■		●			
13	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
14	●	●											●	●	●
15	■	■	●	●				●	●			■	■	■	■
16	●	●	●	●	●	●	●	●	●	●	●	●	■	■	■
17	●	■	■	■	■	■	■	■	■	■	●	●	●	●	●
18	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
19	■	■	■	■	■	■	■	■	■	■	●	●	●	●	●
20	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
21	■	●	●	●	●	●	●	●	●	●	●	●	●	●	●
22															
23												●			
24	●	●	■	■	■	■	■	■	■	■	■	■			●
25			●	■				■	■			■	■		■
26				●								■	■	■	
27			●	●								■	■	■	
28			●	●			●	●	●		●	●	●	●	
29			■												

GOVERNMENTAL OFFICES	TABLE NO. 4.3-THIRD DOCUMENT:SPECIFIC CONDITIONS AND SCOPE OF WORKS							
	10. Periodic Reports	11. Property Damages	12. Attachments	12.1 Site Location Map	12.2 Site Facilities and Building Location	12.3 List of Existing Systems and Equipment	12.4 List of Contractor Personnel Qualifications	
1	●	●				●	●	
2		●						
3		●						
4		●						
5		●						
6	●	●						
7		●						
8		●						
9		●						
10		●						
11		●						
12		●						
13	●	●						
14		●						
15	■	●						
16	●	●	●	●	●	●	●	
17		●						
18		●						
19			●	●	●	●	●	
20								
21	●							
22								
23								
24	●	●	●	●	●	●	●	
25		■						
26		■						
27		■						
28		■						
29								

GOVERNMENTAL OFFICES																
	1. General	1.1 General Requirements	1.2 Basic Requirements	1.3 Site Components Description	1.4 Contract Technical Terminologies	1.5 Performance Terminologies	1.6 Volume of the Required Work	1.7 Required Consultation and Engineering Experience	1.8 Fuel and Oil Consumption	2. Organization and Contractor Personnel	2.1 Personnel Identification Tags	2.2 The Contractor's Personnel Uniforms	2.3 The Contractor's Personnel Appearance and Attitude	2.4 The Contractor's Personnel Training	2.5 The Contractor's Personal Medical Fitnesses	3. Administration Affairs
30				●						●						
31				●						●						
32				●						●	●	●	●	●	●	●
33		●		●						●	■	■	■	■	■	
34	●	■		●		■				●	●	●	●	●	●	●
35										●						
36	●	●	●	●	●	■		●	●	●	●	●	●	●	●	●
37	●	●	●	●	●	●		●		●		●	●		●	●
38	●	●	●	■	■	■		■	■	■		■	■		■	■
39				●						●	●	●	●	●	●	●
40	●			●						●	●	●	●	●	●	■
●	6	8	4	18	2	1	3	6	1	26	18	21	20	20	19	14
■	3	11	1	10	3	9	3	1	1	8	9	8	9	6	6	7
	31	21	35	12	35	30	34	33	38	6	13	11	11	14	15	19
% ●	15%	20%	10%	45%	5%	2.5%	7.5%	15	2.5%	65%	45%	52.5%	50%	50%	47.5%	35%
% ■	7.5%	27.5	2.5%	25%	7.5%	22.5%	7.5%	2.5%	2.5%	20%	22.5%	20%	22.5%	15%	15%	17.5%
% □	77.5%	52.5%	87.5%	30%	87.5%	75%	85%	82.5%	95%	15%	32.5%	27.5%	27.5%	35%	37.5%	47.5%

LEGEND:

● Fully Covered

■ Partially Covered

□ Not Included

% ● Percentage of Totally Covered

% ■ Percentage of Partially Covered

% □ Percentage of Not Included

GOVERNMENTAL OFFICES	3.1 Administrative Procedure	3.2 The Contractor's Personnel Management	3.3 Computerized Management System	4. Procurement and Supply	4.1 Elementary Requirement	4.2 Continuous Requirement	4.3 Replacement Procedures	4.4 Scrap and Obsolete Item Destruction	5. Quality Control and Quality Assurance	5.1 Quality Control and Quality Assurance Objectives	5.2 Quality Control and Quality Assurance Personnel	5.3 Quality Control Quality Assurance Program	6. Safety Measures and Fire Protection	7. Maintenance Work	7.1 Planned Maintenance	7.2 Preventive Maintenance
30		●								●				●		
31		●												●		
32	●	●														
33										●	●			●		
34	●	●		●						●	●	●	●	●		
35																
36	●	●		●						●	●	●	●	●	●	●
37		●		●			●	●	●	●	●	●	●	●	●	●
38		■		■			■	■	■	■	■	●	●	●	●	●
39	●	●	●		●	●	●	●	●	●	●	●	●	●		
40	■	■								●	●	●	●	●		
●	9	25	2	6	3	4	3	5	3	13	9	10	12	31	10	10
■	4	9	1	17	1	1	2	3	7	11	11	3	2	5	10	11
	27	6	37	17	36	35	35	32	30	16	20	27	26	4	20	19
% ●	22.5%	62.5%	5%	15%	7.5%	10%	7.5%	12.5%	7.5%	32.5	22.5%	25%	30%	77.5%	25%	25%
% ■	10%	22.5%	2.5%	42.5%	2.5%	2.5%	5%	7.5%	17.5%	27.5%	27.5%	7.5%	5%	12.5%	25%	27.5%
% □	67.5%	15%	92.5%	42.5%	90%	87.5%	87.5%	80%	75%	40%	50%	67.5%	65%	10%	50%	47.5%

LEGEND:

● Fully Covered

■ Partially Covered

□ Not Included

% ● Percentage of Totally Covered

% ■ Percentage of Partially Covered

% □ Percentage of Not Included

GOVERNMENTAL OFFICES	7.3 Emergency Maintenance	7.4 Maintenance of Supporting Equipment and Services	7.5 List of Building to be Maintained	7.6 List of Electrical Plant to be Maintained	7.7 Telephone System	7.8 Water Systems and Pumps Maintenance	7.9 Fuel Station and Fuel Tank Maintenance	7.10 Sanitation, Landscaping and Irrigation System Maintenance	7.11 Mechanical System Maintenance	7.12 Fire Alarm and Other Electronic System Maintenance	8. Installed System Operation on the Site	9. Janitorial Work	9.1 Daily Janitorial Work	9.2 Weekly Janitorial Work	9.3 Monthly Janitorial Work
30			●	●	●	●				●	●	●	●	●	
31											■	■	■	■	
32							●				●	●	●	●	
33			●						●		■	■	■	■	
34			●						●		●	●	●	●	
35															
36	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
37	●	●	■	■	■	■	■	■		■		■	■	■	■
38	●	●	●	●	●	●		●	●	●	●	●	●	●	●
39												●			
40								●			●	●			
●	12	9	22	19	12	15	12	19	14	10	15	25	18	18	15
■	9	7	8	7	6	6	6	6	6	8	5	10	12	11	8
	19	24	10	14	22	19	22	15	20	22	20	5	10	11	17
% ●	30%	22.5%	55%	47.5%	30%	37.5%	30%	47.5%	35%	25%	37.5%	62.5%	45%	45%	37.5%
% ■	22.5%	17.5%	20%	17.5%	15%	15%	15%	15%	15%	20%	12.5%	25%	30%	27.5%	20%
% □	47.5%	60%	25%	35%	55%	47.5%	55%	37.5%	50%	55%	50%	12.5%	25%	27.5%	42.5%

LEGEND:

- Fully Covered
- Partially Covered
- Not Included
- % ● Percentage of Totally Covered
- % ■ Percentage of Partially Covered
- % □ Percentage of Not Included

GOVERNMENTAL OFFICES	10. Periodic Reports	11. Property Damages	12. Attachments	12.1 Site Location Map	12.2 Site Facilities and Building Location	12.3 List of Existing Systems and Equipment	12.4 List of Contractor Personnel Qualifications	
30		●						
31								
32								
33								
34		●						
35								
36		●						
37		●						
38		●			●			
39		●						
40		●			●			
●	6	26	3	3	5	4	4	
■	1	4	0	0	0	0	0	
	33	10	37	37	35	36	36	
% ●	15%	65%	7.5%	7.5%	12.5%	10%	10%	
% ■	2.5%	10%	0%	0%	0%	0%	0%	
%	82.5%	25%	92.5%	92.5%	87.5%	90%	90%	

LEGEND:

● Fully Covered

■ Partially Covered

□ Not Included

% ● Percentage of Totally Covered

% ■ Percentage of Partially Covered

% □ Percentage of Not Included

FIGURE NO. 4.3 - THIRD DOCUMENT: SPECIFIC CONDITIONS AND SCOPE OF WORKS

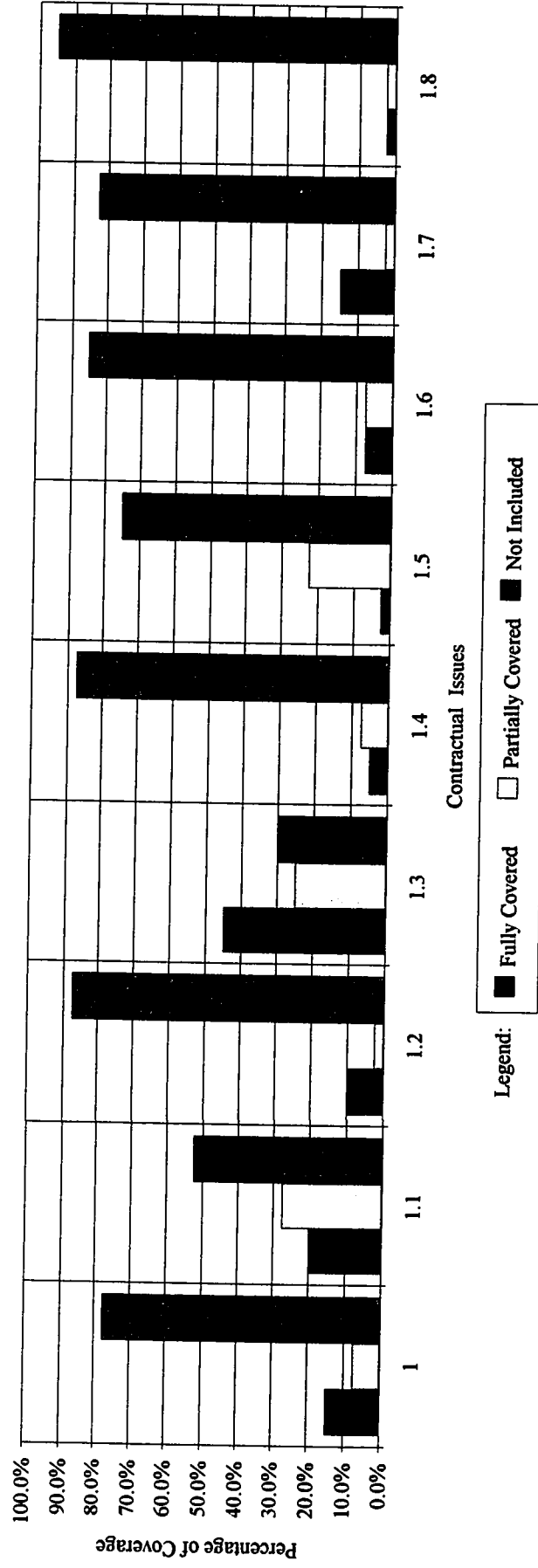


FIGURE NO. 4.3 - THIRD DOCUMENT: SPECIFIC CONDITIONS AND SCOPE OF WORKS

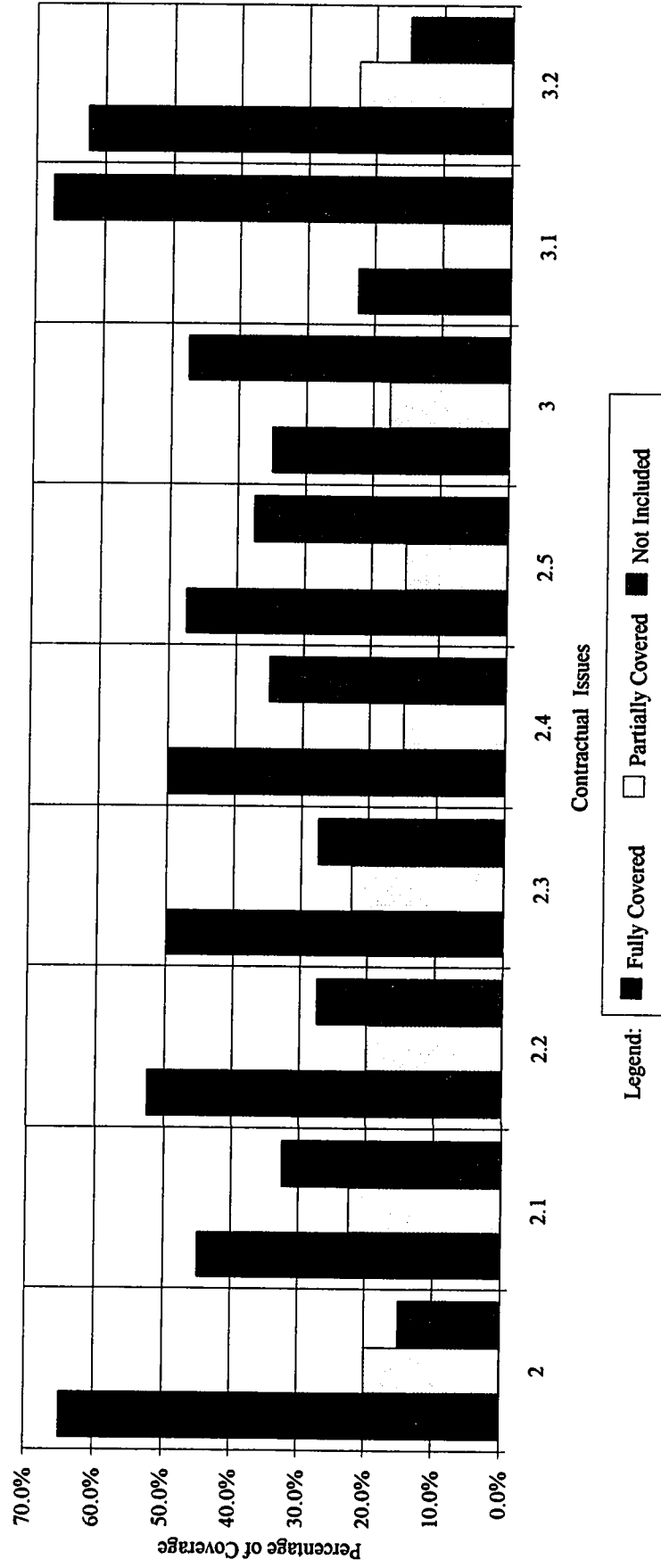


FIGURE NO. 4.3 - THIRD DOCUMENT: SPECIFIC CONDITIONS AND SCOPE OF WORKS

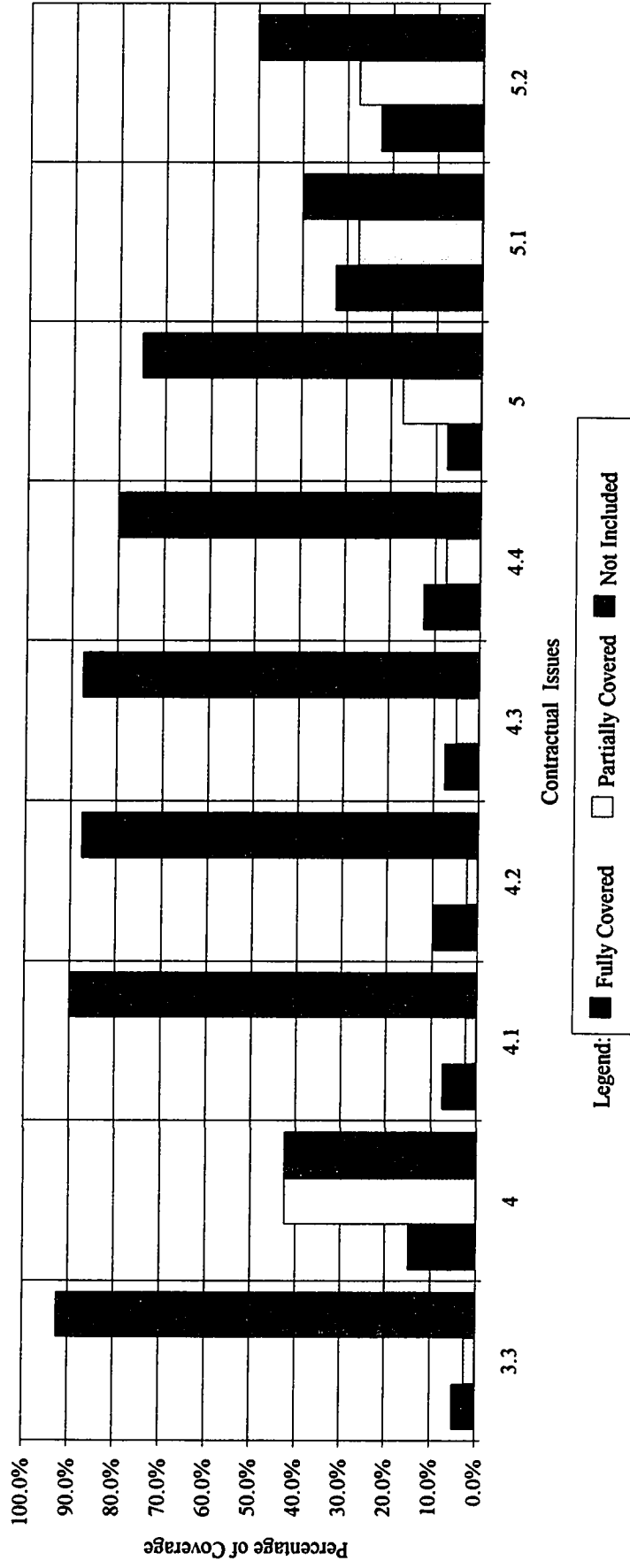


FIGURE NO. 4.3 - THIRD DOCUMENT: SPECIFIC CONDITIONS AND SCOPE OF WORKS

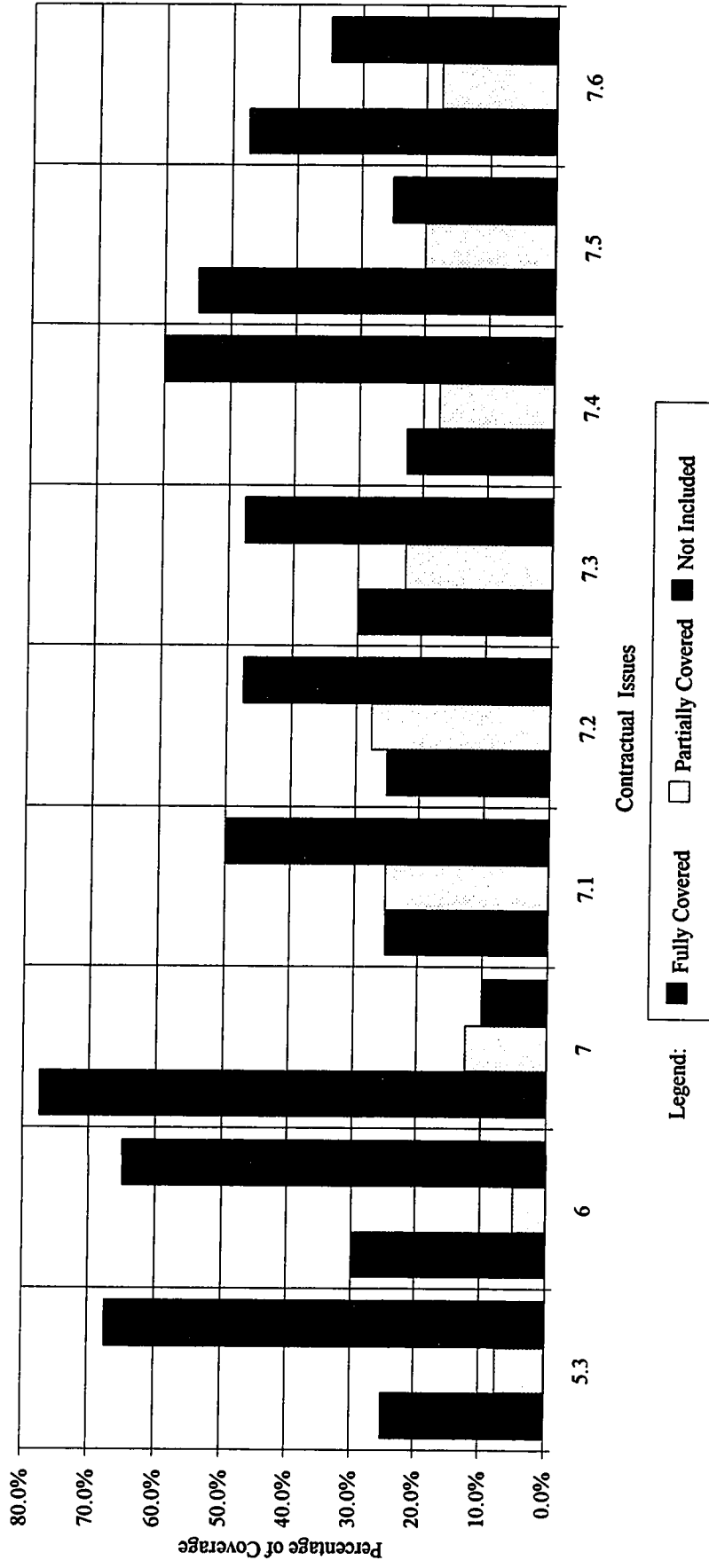


FIGURE NO. 4.3 - THIRD DOCUMENT: SPECIFIC CONDITIONS AND SCOPE OF WORKS

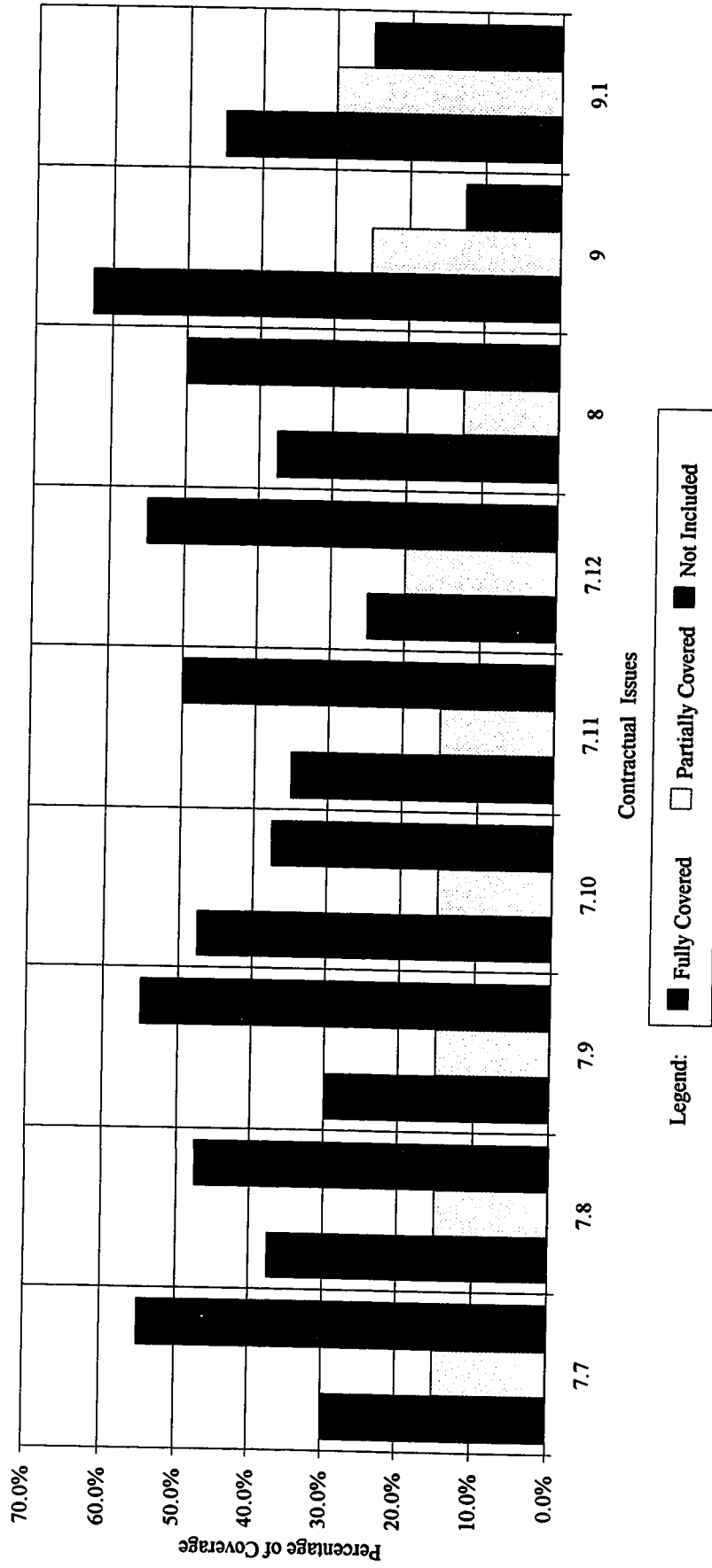
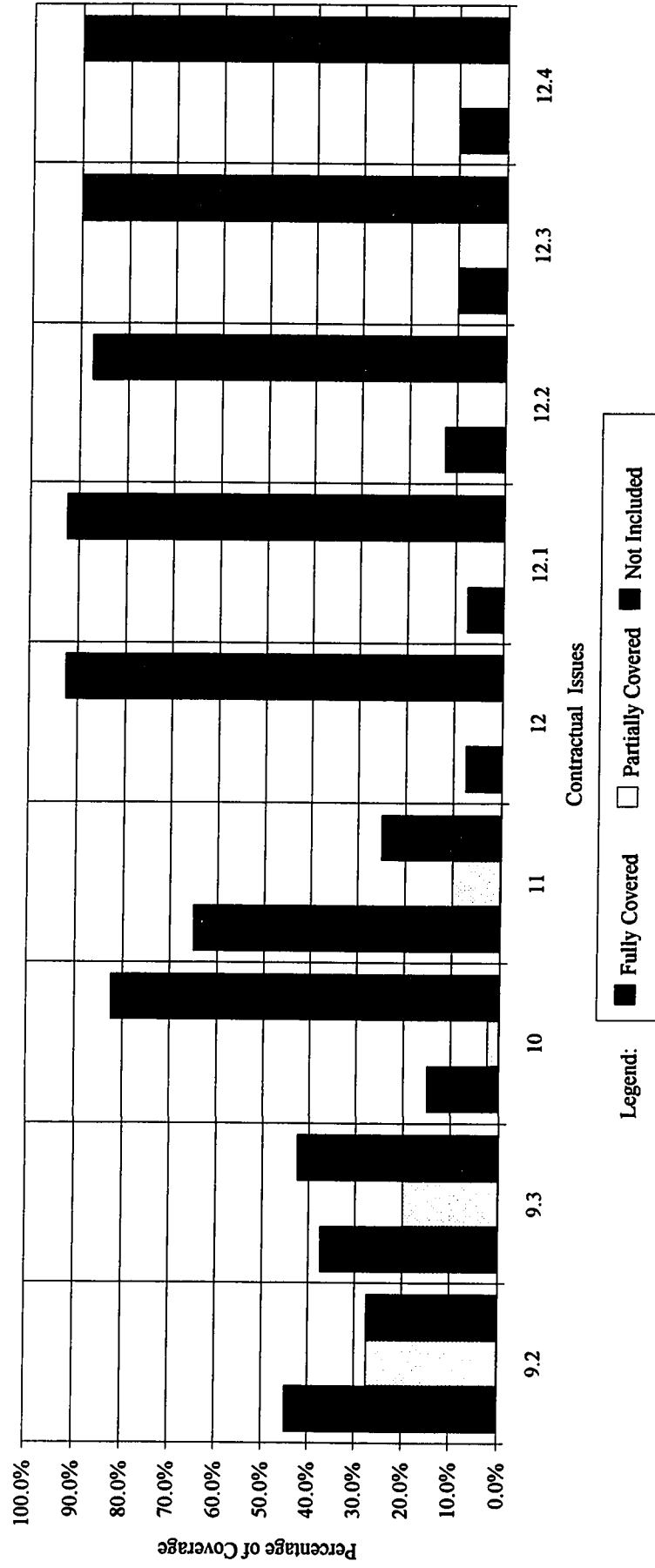


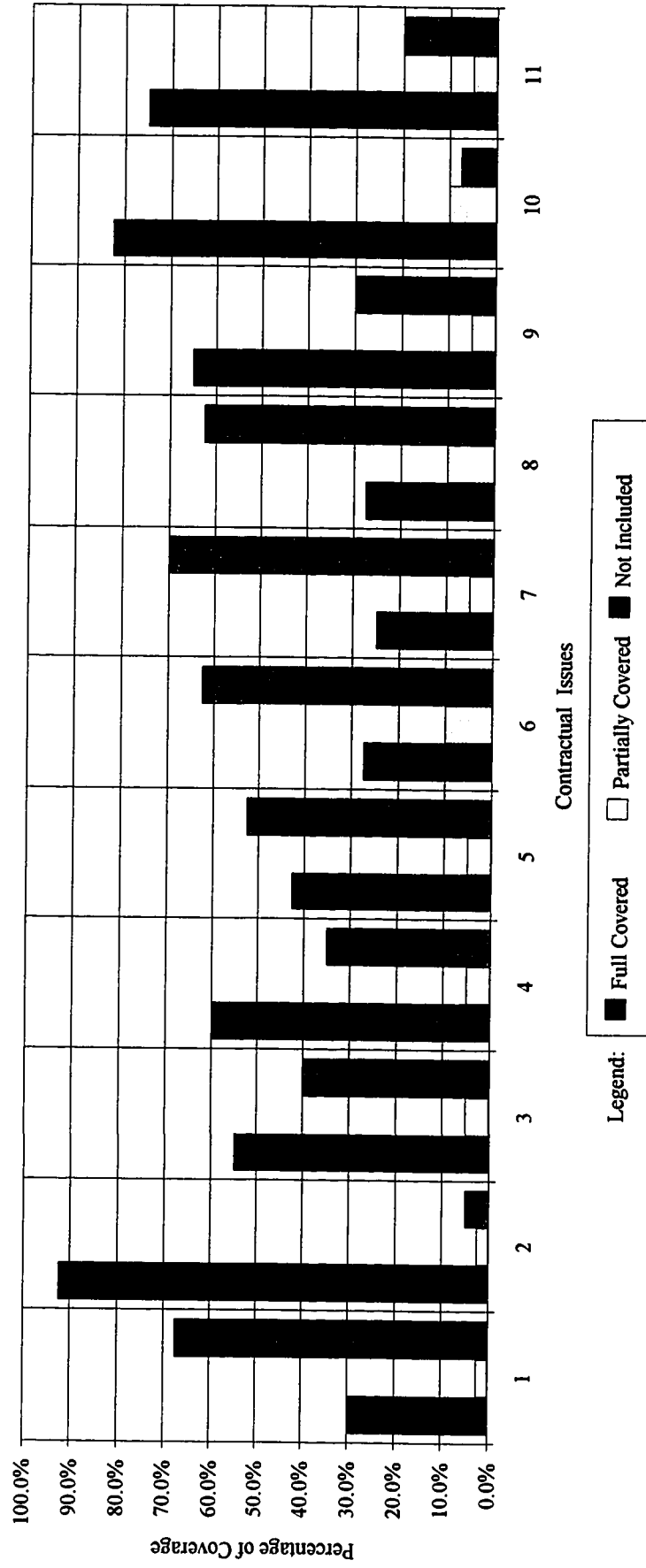
FIGURE NO. 4.3 - THIRD DOCUMENT: SPECIFIC CONDITIONS AND SCOPE OF WORKS



GOVERNMENTAL OFFICES	TABLE NO. 4.4 - FOURTH DOCUMENT: BILL OF QUANTITIES										
	1. The percentage of various works, personal payment and spare parts from the total contract cost.	2. Contractor personnel rate	3. Spare parts consumption rate	4. Janitorial work rate	5. Maintenance work rate	6. Operation work rate	7. Emergency works rate	8. Equipment and tools rate	9. Payment procedure	10. Penalty and delay	11. Consumed materials procedure
1		●	●	●	●	●	●	■	●	●	
2		●	●	●	●	●	●	■	●	●	
3		●							■	■	
4		●				■					●
5		●		●		●				■	
6		●	■	●	●	■		■			■
7	●	●		●					●	●	
8		●		●					●	●	
9	●	●	●	●	●	●	●	●			●
10				■	■	■	■	■	■	■	
11		●	●					●	●	●	●
12		●	●					●	●	●	●
13	■	●	●	■	■	■	■	●	●	●	●
14	●	●	●	●	●	●	●	●	●	●	●
15		●							●	●	●
16		■	■						●	■	■
17		●							●	●	●
18		●							●	●	●
19		●	●	●	●	●	●	●	●	●	●
20									●	●	●
21		●							●	●	●
22		●	●	●					●	●	●
23		●	●	●					●	●	
24		●	●	●					●	●	●
25	●	●	●	●					●	●	●
26	●	●	●	●	●	●	●	●	●	●	●
27		●								●	●
28	●	●	●	●	●				●	●	●
29		●		●						●	●

GOVERNMENTAL OFFICES	TABLE NO. 4.4 - FOURTH DOCUMENT: BILL OF QUANTITIES										
	1. The percentage of various works, personal payment and spare parts from the total contract cost.	2. Contractor personnel rate	3. Spare parts consumption rate	4. Janitorial work rate	5. Maintenance work rate	6. Operation work rate	7. Emergency works rate	8. Equipment and tools rate	9. Payment procedure	10. Penalty and delay	11. Consumed materials procedure
30		●	●	●	●					●	●
31		●	●	●	●					●	●
32		●								●	●
33		●			●					●	●
34	●	●	●	●	●	●	●	●	●	●	●
35		●							●	●	●
36	●	●	●	●	●	●	●	●	●	●	●
37	●	●	●	●	●	●	●	●	●	●	●
38	●	●	●	●	●	●	●	●	●	●	●
39	●	●	●	●	●					●	●
40	●	●	●	●	●					●	●
●	12	37	22	24	17	11	10	11	26	33	30
■	1	1	2	2	2	4	2	4	2	4	2
	27	2	16	14	21	25	28	25	12	3	8
% ●	30%	92.5%	55%	60%	42.5%	27.5%	25%	27.5%	65%	82.5%	75%
% ■	2.5%	2.5%	5%	5%	5%	10%	5%	10%	5%	10%	5%
% □	67.5%	5%	40%	35%	52.5%	62.5%	70%	62.5%	30%	7.5%	20%
LEGEND: ● Fully Covered ■ Partially Covered □ Not Included % ● Percentage of Totally Covered % ■ Percentage of Partially Covered % □ Percentage of Not Included											

FIGURE NO. 4.4 - FOURTH DOCUMENT: BILL OF QUANTITIES



GOVERNMENTAL OFFICES	TABLE NO. 4.5-FIFTH DOCUMENT: TECHNICAL SPECIFICATIONS AND ATTACHMENTS											
	1. Technical specifications of installed systems	2. List of systems manufacturers and dealers	3. Historical background Data Banks	4. Owner and previous contractor reporting and communication systems	5. Additional contract documents	6. Proclamation						
1	●				■							
2	●	●	■			●						
3												
4												
5												
6	●											
7												
8												
9												
10												
11												
12												
13												
14												
15												
16	■	■	■									
17												
18												
19												
20	■	■	■									
21												
22												
23												
24												
25												
26												
27												
28												
29												

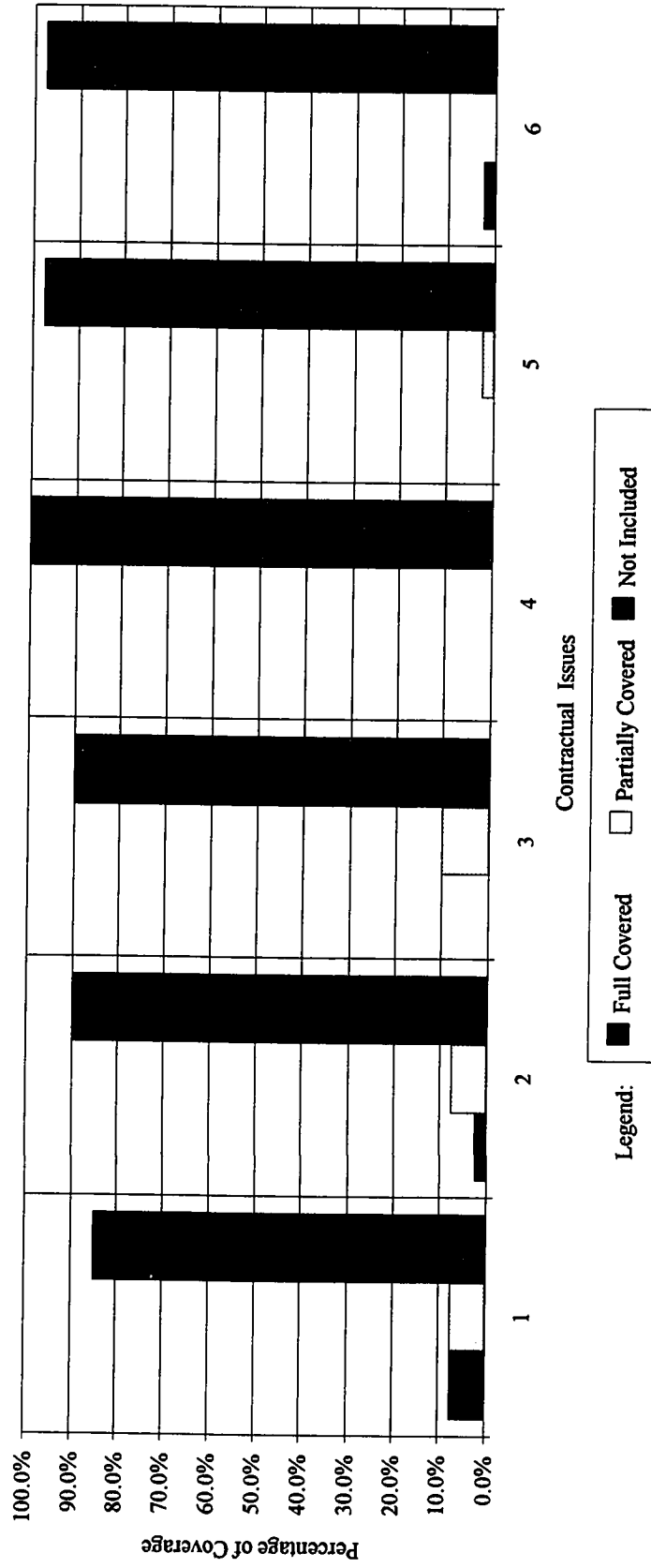
**TABLE NO. 4.5-FIFTH DOCUMENT: TECHNICAL SPECIFICATIONS
AND ATTACHMENTS**

GOVERNMENTAL OFFICES										
	1. Technical specifications of installed systems	2. List of systems manufacturers and dealers	3. Historical background Data Banks	4. Owner and previous contractor reporting and communication systems	5. Additional contract documents	6. Proclamation				
30										
31										
32										
33										
34	■	■	■							
35										
36										
37										
38										
39										
40										
●	3	1	0	0	0	1				
■	3	3	4	0	1	0				
	34	36	36	40	39	39				
% ●	7.5%	2.5%	0%	0%	0%	2.5%				
% ■	7.5%	7.5%	10%	0%	2.5%	0%				
% □	85%	90%	90%	100%	97.5%	97.5%				

LEGEND:

- Fully Covered
- Partially Covered
- Not Included
- % ● Percentage of Totally Covered
- % ■ Percentage of Partially Covered
- % □ Percentage of Not Included

FIGURE NO. 4.5 - FIFTH DOCUMENT: TECHNICAL SPECIFICATIONS AND ATTACHMENTS



GOVERNMENTAL OFFICES	TABLE NO. 4.6 - SIXTH DOCUMENT: BASIC CONTRACT CHARTER (AGREEMENT FORM)									
	1. The application of government procurement laws and regulations	2. Required contract work	3. Location of the work	4. The Contract duration	5. Contract cost and payment procedure	6. Owner representatives	7. Contractor representatives	8. Prohibition of contract assignment	9. Owner and contractor signature	
1	●	●	●	●	●	●	●	●	●	
2	●	■	●	●	●	●	●	●	●	
3	●	■	●	●	●	■	●	●	●	
4	●	■	●	●	●	■	■	●	●	
5	●	■	●	●	●	■	■	●	●	
6	●	■	●	●	●	■	■	●	●	
7	●	■	●	●	●	■	■	●	●	
8	●	■	●	●	●	■		●	●	
9	●	●	●	●	●	■	■	●	●	
10	●	●	●	●	●	■	●	●	●	
11	●	●	●	●	●	■	■	■	●	
12	●	●	●	●	●	■	■	●	●	
13	●	●	●	●	●	■	■	■	●	
14	●	●	●	●	●	●	■	■	●	
15	●	●	●	●	●	●	■	■	●	
16	●	●	●	●	●	●	■	●	●	
17	●	●	●	●	●	●	■	●	●	
18	●	●	●	●	●	●	●	●	●	
19	●	●	●	●	●	■	■	■	●	
20	●	●	●	●	●	●	●	●	●	
21	●	●	●	●	●	■	■	■	●	
22	●	●	●	●	●	●		●	●	
23		●	●	●	●	●		●	●	
24		●	●	●	●	●		●	●	
25	●	●	●	●	●	●		●	●	
26	●	●	●	●	●	●		●	●	
27	■	■	●	●		●		●	●	
28	●	●	●	●		●		●	●	
29	●	●	●	●		●		●	●	

GOVERNMENTAL OFFICES	TABLE NO. 4.6 - SIXTH DOCUMENT: BASIC CONTRACT CHARTER (AGREEMENT FORM)									
	1. The application of government procurement laws and regulations	2. Required contract work	3. Location of the work	4. The Contract duration	5. Contract cost and payment procedure	6. Owner representatives	7. Contractor representatives	8. Prohibition of contract assignment	9. Owner and contractor signature	
30	●	●	●	●		●		●	●	
31	●	●	●	●				●	●	
32	●	●	●	●		■		■	■	
33	●	●	●	●		●		■	■	
34	●	●	●	●	●	●	●	●	●	
35	●	●	●	●	●	●			●	
36	●	●	●	●	●				●	
37	●	●	●	●	●	●			●	
38	●	●	●	●	●	●			●	
39	●	●	●	●	●	●			●	
40	●	●	●	●	●	●			●	
●	37	32	40	40	33	24	7	26	38	
■	1	8	0	0	0	14	14	8	2	
	2	0	0	0	7	2	19	6	0	
% ●	92.5%	80%	100%	100%	82.5%	60%	17.5%	65%	95%	
% ■	2.5%	20%	0%	0%	0%	35%	35%	20%	5%	
% □	5%	0%	0%	0%	17.5%	5%	47.5%	15%	0%	

LEGEND:

● Fully Covered

■ Partially Covered

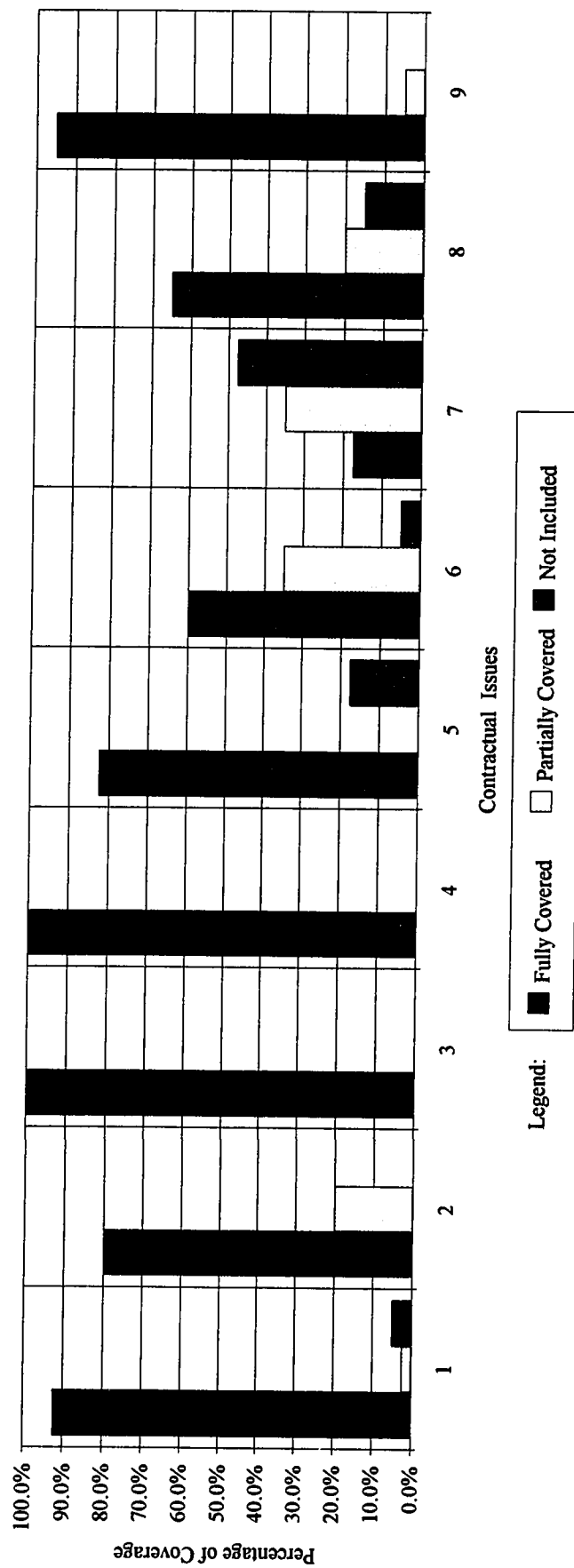
□ Not Included

% ● Percentage of Totally Covered

% ■ Percentage of Partially Covered

% □ Percentage of Not Included

FIGURE NO. 4.6 - SIXTH DOCUMENT: CONTRACT CHARTER



CHAPTER FIVE: RESEARCH METHODOLOGY

This chapter is completely devoted to the research design in which the questionnaire content is presented along with the Pilot Study. The population is then defined, followed by data collection.

5.1 Research Design:

A questionnaire was developed to measure the opinion of maintenance directors in the governmental offices towards a proposed Standardized Public Maintenance Contract. The questionnaire was distributed to the concerned government agencies that form the population of the study, in order to obtain the necessary data for analysis purposes.

5.2 Questionnaire Design:

The addressed questionnaire consists of the following major divisions:

- 5.2.1 An official letter to selected respondents;
- 5.2.2 An introductory statement and basic definitions;
- 5.2.3 The questions divided into three parts:
 - a. Background information - consists of five major questions
 - b. The types of maintenance contracts - consists of ten major questions and statements
 - c. Proposed Standardized Public Maintenance Contract documents- consists of six major documents
- 5.2.4 The questionnaire was designed in such a way as to cover all the data relative to the existing maintenance contracts and the proposed standardized public maintenance contract. Part I and II were formed in a multiple choice question format, including a wide range of choices, where specific data could be inserted in the designated space. Part III of the questionnaire was designed to measure the respondents opinions toward the proposed maintenance contract. These opinions are recorded on the famous 4-point Likert Scale range from "Strongly Agree" to "Strongly Disagree".

5.3 The Pilot Study:

A pilot study was performed just prior to the distribution of the Arabic and English versions of the questionnaire. Ten Government personnel involved in maintenance contracts were selected from the Western Region. They were requested to complete the questionnaire, in order to achieve the following objectives:

- Examine the adequacy of the addressed questions;
- Determine areas of ambiguity and suggested remedies;
- Incorporate additional choices;
- Suggest additional questions to be included; and
- Determine the required time to fill out the questionnaire.

The pilot run helped to detect the following adequacies and ambiguities found in the addressed questionnaire:

Part One: Background information:

- Questions 4 and 5 were restated in a more understandable manner.

Part Two: Types of maintenance contract:

- Question 2 was restated
- Questions 3, 5 and 8: additional choices were incorporated
- Questions 3, 5, 7 and 8: specific space was added for the respondents.

Part Three: Proposed Standardized Public Maintenance Contract:

- Ten questions were restated in a more understandable manner
- Additional questionnaires were incorporated in document Number 2 and 3.

5.4 Population:

The population of this study is confined to all Government Department's who have the authority to supervise or execute public maintenance contracts. The Government annual budget allocations were used as the source of identifying these departments. The General Department of Statistics in the Ministry of Finance and National Economy issues an annual "statistical year book" which contains, among other statistics, the Government budget appropriated by chapter, items and sections, 1410/1411 A. H. The twenty-sixth (26th) issue of this book, 1990, the latest available, was used to produce the list of Government Department's which satisfy the above population criteria. They totaled forty (40) agencies which are listed in Appendix - A. The remaining agencies were either using direct labour or were not willing to give details of their maintenance contracts.

Further investigations indicated that some of the Ministries, Directorates and Authorities have several departments in the Kingdom satisfying the definitions of the study population.

Thereby, bringing the total population up to one hundred and ten (110) agencies. Since this number is relatively small, no specific sampling scheme was used and the entire population was surveyed.

The questionnaire was filled out by the Directors of Maintenance Department's, as they are expected to know most about the contents of this research.

5.5 Data Collection:

Mail surveys were adopted and the questionnaire was designed to be self explanatory.

The questionnaires were mailed on the 12th February 1994 (2/9/1414H). A follow up letter was sent on the 19th March 1994 (7/10/1414H) to those who did not respond, reminding them about the questionnaire and asking for a response; an additional copy of the questionnaire was also attached. By 28th of June 1994 (18/12/1414H), total responses reached ninety-one percent (91% of all questionnaire sent). These ninety-one percent (91%) completed questionnaires were used for the analysis.

The data was analyzed using a computer program, namely "Statistical Analysis System" (SAS).

Data was obtained by responses, to either multiple choice questions, including specific information that can be filled in a given space, or 4-point Likert scale questions. All data was entered in the computer using a coding scheme designed for this purpose

All the optioned structured data of this study was summarized by calculating means, standard deviations, frequency, percentage and ranks. Information written by the respondents on other (specify) choices were analyzed manually.

CHAPTER SIX: RESULTS AND DISCUSSION

6.1 Introduction:

The objectives of this research are to develop a standardized public building maintenance contract for all governmental agencies in the Kingdom. The proposed maintenance contract will assist the maintenance department's in the governmental offices to supervise the maintenance contractor and will reduce the number of disputes and contradictions between contract parties.

This chapter contains the results of the Proposed Standardized Public Building Maintenance Contract questionnaire.

Information presented in this chapter will be as follows: parts definition; ideas behind the incorporation of each part and its related topic in the questionnaire; results and discussion. The advantages to be achieved from such patterns is to give the reader complete information regarding each issue.

6.2 Results and Analysis:

The results of this study are generated from one hundred (100) responses to the questionnaire mailed to one hundred and ten (110) government department's and organizations that represent the population of the study. The data collected was analyzed statistically. The structured data was summarized by calculating frequencies, percentages, means, standard deviations, and ranks. Respondents written responses, in "other" (specify) choices were summarized manually.

The discussion will be as follows:

Part One: Background information:

1. Name of the governmental agencies.
2. Name of the maintenance departments.
3. Maintenance departments experiences.
4. Respondent's administrative position.

5. The number of maintenance department personnel.

Part Two: Types of Maintenance and Operation Contracts:

1. The execution of maintenance works.
2. Maintenance contractor grades.
3. Types of buildings to be maintained.
4. Area of specialization in maintenance.
5. Standardized maintenance contract.
6. Types of building maintenance contracts.
7. The suitability of maintenance contract types to governmental agencies.
8. The preparation of maintenance contracts.
9. Levels of coordination between offices.
10. Contract documents.

Part Three: Proposed Standardized Public Building Maintenance Contract Documents:

1. First document: General Instructions to Bidders.
2. Second document: General Conditions.
3. Third document: Specific Conditions and Scope of Works.
4. Fourth document: Bill of Quantities.
5. Fifth document: Technical Specifications.
6. Sixth document: Basic Contract Charter (Agreement Form).

6.2.1 Part One: Background Information:

The first part of the questionnaire consists of five questions, the first two questions are optional and the remaining three are multiple choice questions. This part is considered to be very important, because it

provides this study with the necessary background information about the respondents and the relative statistical information of the different governmental agencies. The questions were: names of the governmental agencies (optional), names of the maintenance department's (optional), maintenance department experience, respondent's administrative position and the number of maintenance personnel.

1. Names of the Governmental Agencies:

Under this heading, the respondents were asked to write the name of the governmental offices but were given the option not to answer this question.

The survey indicated that twenty-two percent (22%) of the respondents (22 out of 99) had written the name of the government offices in which they were working and seventy-eight percent (78%) of the respondents (77 out of 99) did not want to mention their office names (Table 6.1).

Such results may be interpreted by the government's restrictive measures, to provide information to the public, which is considered to be very confidential.

Table 6.1 Names of Governmental Agencies

Question Outcome	Frequency (# of Resp.)	Percent (%)
A. The number of respondents who have written their office names	22	22
B. The number of respondents who have not written their office names	77	78
	n = 99	

2. Names of the Maintenance Departments:

This question provides this study with the different office names assigned by each governmental office to execute or supervise maintenance work. The early survey indicated that maintenance work is primarily viewed as a necessary disaster repairing function, and as a result of this, a number of governmental offices have assigned inexperienced administrative offices to conduct and perform the work of maintenance.

The survey indicated that eleven percent (11%) of the respondents (11 out of 99) mentioned the names of their maintenance department's while the remaining number did not (Table 6.2).

Table 6.2 Names of Maintenance Departments

Question Outcome	Frequency (# of Resp.)	Percent (%)
A. The number of respondents who have written their departments names	11	11
B. The number of respondents who have not written their departments names	88	89
	n = 99	

3. Maintenance Department's Experiences:

This question provides the study with the years of maintenance department experiences in different governmental offices. The years of experience were classified, in this question, to four categories as follows: less than five years, five to ten years, ten to twenty years and above twenty years.

The survey indicated that fifteen percent (15%) of the respondents (15 out of 100) had less than five years experience in maintenance work and forty-eight percent (48%) had five to ten years experience (Table 6.3).

Table 6.3 Maintenance Department's Experiences

Question Outcome	Frequency (# of Resp.)	Percent (%)
1. Less than five years	15	15
2. From five to ten years	48	48
3. From ten to twenty years	37	37
4. Above twenty years	0	0
	n = 100	

This result demonstrates, that most of the governmental offices have less than twenty years maintenance experience, which is considered to be relatively low compared to other fields such as construction and industrial work.

4. Respondent's Administrative Position:

This question will provide this study with the names of the administrative positions of the respondents. Such information will show the names of the different managers assigned by governmental office to supervise maintenance work.

The survey indicated that twenty-two percent (22%) of the respondent's (22 out of 98) who attempted to answer the questionnaires were working as Director of Maintenance Department and fifty percent (50%) of respondents were working as Maintenance Contract Supervisor (Table 6.4).

This result shows that seventeen percent (17%) of the governmental offices assigned inexperience departments to supervise the work of maintenance. These departments have a number of engineers and supervisors to supervise the maintenance contracts and to prepare the contract documents.

Table 6.4 Respondent's Administrative Position

Question Outcome	Frequency (# of Resp.)	Percent (%)
1. Director's of Maintenance Departments	22	23
2. Acting Director's of Maintenance Departments	3	3
3. Director's of Maintenance Planning and Studies Departments	4	4
4. Director's of Accounting Department (supervisor engineer)	17	17
5. Maintenance Contract Supervisor	50	51
6. Others (specify): added by the respondents	2	2
n = 98		

5. The Number of Maintenance Department Personnel:

This question provided this study with the number of maintenance personnel employees in different government offices. This data will reflect the volume of maintenance work to be performed by the direct labor in the maintenance office.

The survey indicated that eleven percent (11%) of the respondents (11 out of 100) had less than twenty persons working in the maintenance department and thirty-six percent (36%) of the respondents (36 out of 100) had more than two-hundred maintenance workers in their office (Table 6.5).

The results indicated that maintenance manpower is high, reflecting the volume of maintenance work performed in governmental office is relatively high.

Table 6.5 The Number of Maintenance Department Personnel

Question Outcome	Frequency (# of Resp.)	Percent (%)
1. Less than twenty people	11	11
2. From twenty to fifty people	15	15
3. From fifty to one hundred people	28	28
4. From one hundred to two hundred people	10	10
5. More than two hundred people	36	36
	n = 100	

6.2.2 Part Two: Types of Maintenance and Operation Contracts:

The second part of the questionnaire dealt with the issues related to the types of Maintenance and Operation Contracts in the governmental offices. It consisted of ten multiple choice questions, except question No. Nine which was formed to evaluate different maintenance contracts using ranges from [strongly agree (4)] to [strongly disagree (1)]. This method will be explained fully in the following part of the questionnaire. The topics to be discussed within the second part of the questionnaire are as follows:

1. The execution of maintenance work.
2. Maintenance contractor grades.
3. Types of buildings to be maintained.
4. Areas of specialization in the maintenance.
5. Standardized maintenance contracts.

6. Types of building maintenance contracts.
7. The suitability of maintenance contract types to governmental agencies.
8. The preparation of maintenance contracts.
9. Level of coordination between offices.
10. Contract documents.

A detailed investigation of these topics will be very beneficial in the preparation of the Standardized Maintenance Contract document to be discussed in the third part of the addressed questionnaire.

1. **The Execution of Maintenance Work:**

Under this question, the respondents will indicate the method by which the maintenance work has been executed in the different governmental offices. There are basically two major categories of maintenance work execution. The choice is between employing tradesmen directly to execute maintenance work or engaging the following alternatives of contractors:

- Saudi contractor.
- Saudi-Saudi joint venture.
- Saudi-foreign joint venture.
- Foreign contractor.

The survey indicated that forty-five percent (45%) of the respondents (45 out of 100) employed direct labour for the required maintenance work in the governmental offices. Also, the survey indicated that fifty percent (50%) of the respondents (50 out of 100) employed an independent maintenance contractor to perform the work, while only five percent (5%) of respondents (5 out of 100) employed both direct labour and maintenance contractors (Table 5.6).

Such results may be interpreted as to the governmental regulations which favour Saudi contractors over other foreign contractors, plus

Saudi contractors demonstrated a remarkable performance to execute the required maintenance work (Table 6.6).

Table 6.6 The Execution of Maintenance Work

Question Outcome		Frequency (# of Resp.)	Percent (%)
1.	Direct labour	45	45
2.	Independent maintenance contractor		
2.1	Saudi contractor	34	34
2.2	Saudi-Saudi joint venture	0	0
2.3	Saudi-Foreign joint venture	0	0
2.4	Foreign contractor	16	16
3.	Both direct labour and maintenance contractor	5	5
		n =100	

2. Maintenance Contractor Grades:

There are six grade classifications under this question. These determine the required grade classification required by different governmental offices, to select the maintenance contractor. The grade classifications for maintenance contractors start at grade one up to grade six and the respondents were asked to indicate the minimum grade required by them to satisfy contract document regulations and conditions.

The obtained results, indicated that the majority of respondent's ninety-five percent (95%) (95 out of 100) required the first three classification as their minimum required grade for the maintenance contractor. The survey indicated that twenty-five percent (25%) of the respondents (25 out of 100) required the first grade of classification and thirty percent (30%) of the respondents (30 out of 100) required the second grade of classification.

Such results demonstrate that most of the governmental offices required high contractor classification to ensure that the selected contractor performs the work with the highest degree of skill and efficiency (Table 6.7).

Table 6.7 Maintenance Contractor Grades

Question Outcome	Frequency (# of Resp.)	Percent (%)
1. Grade Number 1	25	25
2. Grade Number 2	30	30
3. Grade Number 3	40	40
4. Grade Number 4	3	3
5. Grade Number 5	0	0
6. Grade Number 6	2	2
7. Other (Specify) added by respondents	0	0
	n = 100	

3. Types of Buildings to be Maintained:

For this question, four major types of buildings were assigned, they were: residential, office, industrial and medical. The last category of this question was designated for other types of buildings to be specified by the respondents.

The results demonstrated that the majority of respondents, ninety percent (90%) (90 out of 100) indicated that the residential and office buildings were often the types of buildings requiring maintenance in the governmental offices. The survey also indicated that thirty percent (30%) of the respondents (30 out of 100) were responsible for the maintenance of their residential buildings, and sixty percent (60%) of the respondents (60 out of 100) were responsible for maintenance of the office buildings (Table 6.8).

Table 6.8 Types of Buildings to be Maintained

Question Outcome	Frequency (# of Resp.)	Percent (%)
1. Residential Buildings	30	30
2. Office Buildings	60	60
3. Industrial Buildings	6	6
4. Medical Buildings	4	4
5. Other (Specify) added by respondents	0	0
	n = 100	

The above results reflect that governmental office assigned most of their maintenance departments to carry out the necessary work to residential and office buildings.

4. Areas of Specialization in Maintenance:

Under this question, there were eight areas of specialization in maintenance, they were: civil, architectural, sanitation, mechanical, electrical, plantation and landscaping, supporting plants and janitorial. Other area of specialization will be specified by respondents in the last category of this question.

The collected survey indicated that sixteen percent (16%) of the respondents specialized in the maintenance of civil work and twenty five percent (25%) of respondents specialized in the maintenance of electrical work and mechanical work (Table 6.9).

Such results reflect, that there is no specific area of specialization in maintenance to be considered in the governmental offices as the dominate specialization over the others. Generally, the results indicated that electrical, mechanical and civil work are the areas of maintenance specialization compared to other specializations.

Table 6.9 Areas of Specialization in Maintenance

Question Outcome		Frequency (# of Resp.)	Percent (%)
1.	Civil	64	16
2.	Architectural	32	8
3.	Sanitation	32	8
4.	Mechanical	100	25
5.	Electrical	100	25
6.	Plantation and Landscaping	12	3
7.	Supporting Plant	20	5
8.	Janitorial	40	10
9.	Other (specify) added by respondents	0	0

5. Standardized Maintenance Contract:

Under this question, two major options were incorporated to obtain the expected outcome from the respondents. The respondents were required to indicate precisely, the use of a Standardized Maintenance Contract in their maintenance department.

The obtained results demonstrated that twenty-seven percent (27%) of the respondents (27 out of 99) have a Standardized Maintenance Contract document and seventy three percent (73%) of the respondents (72 out of 99) have not yet developed a Standardized Maintenance Contract document (Table 6.10).

Such results, reflect the demand for the formulation of a Standardized Maintenance Contract document, for all the governmental offices to regulate and control the right, duties and obligations of the contracted parties.

Table 6.10 Standardized Maintenance Contract

Question Outcome		Frequency (# of Resp.)	Percent (%)
1.	Number of respondents selecting "Yes" choice	27	27
2.	Number of respondents selecting "No" choice	72	73
		n = 99	

6. Types of Building Maintenance Contracts:

This question included eight types of building maintenance contract's that are used by governmental offices. They are: Fixed Price; Cost Plus Percentage; Cost Plus Fixed Fee; Cost Plus Fixed Fee with a Guaranteed Maximum; Unit Price; Term; Schedule and Purchased Labour Contracts. There is an optional category included at the end of the question, for any new type of building maintenance contract not mentioned in the list above.

The results show that the majority of respondents selected the Term, Fixed Price and Unit Price Contracts, as the most frequently used types of building maintenance contracts in the governmental offices in the Kingdom. The survey precisely indicated that forty percent

(40%) of respondents (40 out of 100) selected the Unit Price Contract as the most advantageous type of building maintenance contract and twenty-five percent (25%) of the respondents (25 out of 100) supported the use of Fixed Price Contract's in the governmental offices (Table 6.11).

The results reflected that only specific types of building maintenance contracts can be considered practical for application in the governmental office in Saudi Arabia, which directly affects the way in which the contract should be prepared.

Table 6.11 Types of Building Maintenance Contracts

Question Outcome	Frequency (# of Resp.)	Percent (%)
1. Fixed Price Contract	25	25
2. Cost Plus Percentage Contract	8	8
3. Cost Plus Fixed Fee Contract	6	6
4. Cost Plus Fixed Fee with a guaranteed Maximum Contract	0	0
5. Unit Price Contract	15	15
6. Term Contract	40	40
7. Scheduled Contract	0	0
8. Purchased Labour Contract	6	6
9. Other (Specify) added by Respondents	0	0
	n = 100	

7. The Suitability of Maintenance Contract Types to Governmental Agencies:

This question was designed to include the eight (8) types of building maintenance contracts mentioned in the previous question. The respondents were required to indicate the suitability of these contract to be used in the governmental offices. These types of building maintenance contracts were evaluated using ranges from 4 (strongly agree) to 1 (strongly disagree).

The survey indicated that, for Fixed Priced Contract, thirty-two (32) and fifty-six (56) respondents have "strongly agree" and "agree" choices, whereas, twelve (12) and no respondents ticked "disagree" and "strongly disagree" respectively for the Fixed Price Contract (Table 6.12).

The results of this question, and the previous one, indicated very clearly, that the governmental offices prefer to use the Term, Fixed Price and Unit Price Contracts as the best contractual arrangement for their maintenance contracts.

These results emphasized the necessity of establishing a standardized form of maintenance contract to be used in all governmental offices, based on selected types of building maintenance contracts.

TABLE 6.12 The Suitability of Maintenance Contract Types to Governmental Agencies

Types of Building Maintenance Contracts	Number of Respondents	Strongly Agree		Agree		Disagree		Strongly Disagree		Mean	Standard Deviation	Agreement Index
		Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent			
1	100	32	32.00	56	56.00	12	12.00	0	0.00	3.20	0.65	80.00
2	100	0	0.00	20	20.00	30	30.00	50	50.00	1.70	0.56	42.50
3	100	8	8.00	12	12.00	25	25.00	55	55.00	1.73	0.49	43.25
4	100	12	12.00	15	15.00	20	20.00	53	53.00	1.86	0.42	46.50
5	100	30	30.00	55	55.00	10	10.00	5	5.00	3.10	0.65	77.50
6	100	38	38.00	56	56.00	6	6.00	0	0.00	3.32	0.67	83.00
7	100	4	4.00	35	35.00	55	55.00	6	6.00	2.07	0.63	51.75
8	100	0	0.00	10	10.00	60	60.00	30	30.00	1.80	0.69	45.00
9	100	0	0.00	0	0.00	0	0.00	0	0.00	0.00	0.00	0.00

8. The Preparation of Maintenance Contracts:

This question will provide the study with the necessary information regarding the method by which the maintenance contract documents are prepared. Usually the documents are prepared by the maintenance departments and accounting offices. At the end of the question, there is an additional category for the respondents to write other options for document preparation methods.

The majority of respondents indicated that the maintenance contract documents should be prepared by the maintenance department. The survey indicated precisely that seventy-four percent (74%) of the respondents (72 out of 98) supported the preparation of maintenance contract documents by the maintenance departments and seventeen

percent (17%) of the respondents (17 out of 98) preferred that the accounting office be responsible for the preparation of contract documents (Table 6.13).

The above results, reflect that the building maintenance contract documents in a number of governmental offices were prepared by supervising engineers, working in inexperienced departments, such as the accounting office.

Table 6.13 The Preparation of Maintenance Contracts

Question Outcome	Frequency (# of Resp.)	Percent (%)
1. The Maintenance Department	72	74
2. Accounting department	17	17
3. Both of the above	9	9
	n = 98	

9. **Level of Coordination between Offices:**

This question included four levels of coordination between the governmental offices, one of them should be used to facilitate the process of contract documents preparation. These levels range from maximum coordination level to no coordination at all.

The obtained survey results indicated that seventy percent (70%) of the respondents (12 out of 17) adopted an average coordination level between the maintenance department and the accounting office. The results also demonstrated that eighteen percent (18%) of the respondents (3 out of 17) adopted the maximum level of coordination and six percent (6%) of the respondents (1 out of 17) used the minimum level of coordination or no coordination at all (Table 6.14).

The previous results proved that there is good coordination levels between the accounting offices and the maintenance departments in the cases where maintenance contract documents were prepared by accounting offices.

Table 6.14 Level of Coordination between Offices

Question Outcome	Frequency (# of Resp.)	Percent (%)
1. Maximum level of coordination	3	18
2. An average level of coordination	12	70
3. Minimum level of coordination	1	6
4. No coordination at all	1	6
	n = 17	

10. Contract Documents:

This question provides the study with the contracting documents that are most commonly used in the building maintenance contracts in the governmental offices. The list includes the following major documents: article of agreement; general conditions of the contract; specific conditions; specification and scope of work; bill of quantities; addenda; as-built drawings; quality control and quality assurance measures; site location maps; equipment and systems schedules; government procurement laws and regulations and other documents to be specified by the respondents which are not available in this list.

The gathered results demonstrated that the first five documents in the list are considered to be the most often used documents in the building maintenance contracts for governmental offices. The survey indicated that twenty-five percent (25%) of the respondents included the general conditions of the contract as a major document in the maintenance contract and twenty percent (20%) of the respondents included the bill of quantities in the maintenance contract (Table 6.15).

Table 6.15 Contract Documents

Question Outcome	Frequency (# of Resp.)	Percent (%)
1. Articles of agreement	48	12
2. General Conditions of Contract	100	25
3. Specific Conditions	72	18
4. Specifications and Scope of Work	64	16
5. Bill of Quantities	80	20
6. Plans and Drawings	8	2
7. Schedule of rates	0	0
8. Bulletins	0	0
9. Addenda	4	1
10. As-built drawings	16	4
11. Quality Control and Quality Assurance Measures	0	0
12. Site location Maps	4	1
13. Equipment and Systems Schedules	0	0
14. Government Procurement Laws and Regulations	4	1
15. Other (specify) added by respondents	0	0

6.2.3 Part Three: Proposed Standardized Public Building Maintenance Contract Documents:

The third part of the questionnaire consists of six major maintenance documents which formed the proposed Standardized Public Maintenance Contract. For each document, there are a set of contractual issues to be included, to regulate and control the rights, duties and obligations of the contract parties. These documents were evaluated using ranges from [strongly agree (4)] to [strongly disagree (1)]. The respondents were asked to check on each of them and to consider the degree of agreement of each. For statistical analysis, the following values were assigned to each responses (degree of agreements):

- strongly agree (4)
- agree (3)
- disagree (2)
- strongly disagree (1)

In order to make the results more understandable, the following mean ranges were specified:

Table 6.16 Proposed Standardized Public Building Maintenance Contract (Mean and Agreement Index Ranges)

Scale Description	Mean Range	Agreement Index (%)
Strongly disagree	0.00 - 0.99	0 - 24
Disagree	1.00 - 1.99	25 - 49
Agree	2.00 - 2.99	50 - 74
Strongly agree	3.00 - 4.00	75 - 100

4	3	2	1	0
Agreement	Region	Disagreement	Region	
Strongly Agree	Agree	Disagree	Strongly Disagree	
4	2.99	1.99	0.99	0
(100%)	(74%)	(49%)	(24%)	(0%) AI

The mean of each variable was measured using the above ranges. Ranging method were used to obtain an agreement index that simplified and re-

duced all numbers to a range from (0) to (100), with a base of (100), for relative comparison:

$$\text{The agreement index (AI) (\%)} = \frac{4(n_1) + 3(n_2) + 2(n_3) + 1(n_4)}{4(n_1 + n_2 + n_3 + n_4)} \times 100$$

Since the specified mean ranges coincide mostly with the actual assigned response values, the outcome of the respondents will not have two possible opposite answers and it will not require any kind of result testing.

The remaining part of this chapter contain the results of the third part of the questionnaire. Information presentation will follow the following pattern: document description, the importance of each document, results and discussion. The idea behind such a pattern is to give the reader complete information regarding each document, including its contractual issues.

First Document: General Instructions to Bidders:

This document consists of a number of instructions related to the preparation of bid price proposals to be submitted to the client. Further specific instructions to bidders may also be issued within this document. Proposals should be submitted only in response to invitations for bid issued by the contracting department in the governmental offices.

This document is considered to be of primary importance to both parties of the contract because it addresses to bidders, the bid's requirements, and to explain the nature and scope of work. Secondly, it helps the bidders to obtain as much information as possible regarding the contract and to answer any question.

The gathered results of this document, with its related contractual issues, indicated that sixty eight (68) and twenty-three (23) respondents have selected "strongly agree" and "agree" choices, respectively, whereas, four (4) and zero (0) respondents selected the "disagree" and "strongly disagree" choices, respectively. The mean was equal to (3.67) and the agreement index (AI) was equal to ninety-two percent (92%) as the highest agreement index for the contractual issue No. Thirteen. The thirteenth contractual issue falls into the "strongly agree" range.

The survey indicated that thirty (30) and thirty-eight (38) respondents have selected "strongly agree" and "agree" choices respectively, whereas, fourteen (14) and twelve (12) respondents have selected the "disagree" and "strongly disagree" choices, respectively. The mean was equal to (2.91) and the agreement

index (AI) was equal to seventy three percent (73%) as the lowest agreement index for the eleventh contractual issue. This contractual issue falls into the "agree" range (Table 6.17) (Figure 6.1).

A detailed analysis of the results of the first documents, indicated very clearly that eighty-four (84) of all the respondents (84 out of 93) supported the incorporation of this document with its contractual issues in the building maintenance contract. The following is a sampling of many points that were made by the respondents which emphasize the importance of this document and the interpretation of the high support of the respondents:

- This document helps the bidders to understand the scope of work, its requirements and specifications.
- It helps the bidders to be certain that they receive a full bid document package to prepare the bid in accordance with the specifications, terms and conditions set forth in the bid package.
- It assists the client in having the most efficient and qualified contractor to perform the maintenance work.
- This document encourages the local Saudi maintenance contractors by reinforcing the related rules issued by a number of governmental offices.
- It guides the prospective bidders to the methods, in which the governmental agencies want the bids to be prepared. This will unify the bidders proposals submitted by different companies to facilitate the selection of the most qualified contractor, whose bid, in the clients opinion, represents the least overall cost.
- It provides the bidders with the necessary information related to site location and conditions.
- It overcomes the problems of different interpretations of any topic in the document of the maintenance contract by the contract parties.
- It indicates very precisely the order of importance of the contract documents and will facilitate the performance of the contractor.

- It ensures that the work of maintenance will be performed by the most qualified contractor, who has the technical experience and the necessary supporting facilities to do first class maintenance work.
- It ensures that contractor personnel comply with the governmental offices required qualifications.
- It ensures that the contractor provides to the governmental offices the most efficient and practical equipments which fulfill the contract conditions.
- It exposes the governmental offices to all supplies and sub-contractor qualifications, experience and amount of work that the contractor assigns to them. It ensures that the governmental offices are fully addressed to all alternative materials and equipment to be used, prior to their installations at the sites.
- It ensures that the contractor is fully committed to accomplishing the required work of the contract, by providing a preliminary guarantee for performance in connection with the contract.
- It avoids any sort of ambiguities, contract document contradictions and bidder's misinterpretation of the conditions and specifications.
- It confines all bidders proposals to be valid for a reasonable amount of time for evaluation and selection processing and to award the contract to the most qualified bidder.
- Finally, it enables the governmental offices to assess the bidders capability and experience to perform the contract work.

Table 6.17 First Document: General Instructions to Bidders

Contractual Issues Number	Number of Respondents	Strongly Agree		Agree		Disagree		Strongly Disagree		Mean	Standard Deviation	Agreement Index
		Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent			
1	90	58	64.44	30	33.33	2	2.23	0	0.00	3.62	0.75	90.50
2	90	43	47.78	46	51.11	0	0.00	1	1.11	3.46	0.69	86.50
3	96	44	45.83	28	29.17	16	16.67	8	8.33	3.13	0.64	78.25
4	91	38	41.76	52	57.14	1	1.10	0	0.00	3.39	0.69	84.75
5	96	56	58.33	30	31.25	6	6.25	4	4.17	3.44	0.72	86.00
6	94	48	51.06	34	36.17	8	8.51	4	4.26	3.34	0.68	83.50
7	94	46	48.94	32	34.04	13	13.83	3	3.19	3.29	0.66	82.25
8	90	50	55.56	38	42.22	2	2.22	0	0.00	3.53	0.71	88.25
9	96	60	62.50	28	29.17	5	5.21	3	3.12	3.51	0.74	87.75
10	92	47	51.09	37	40.22	6	6.52	2	2.17	3.40	0.68	85.00
11	94	30	31.91	38	40.43	14	14.89	12	12.77	2.91	0.59	72.75
12	94	49	52.13	24	25.53	13	13.83	8	8.51	3.21	0.68	80.25
13	95	68	71.58	23	24.21	4	4.21	0	0.00	3.67	0.79	91.75
14	92	19	20.65	67	72.83	0	0.00	6	6.52	3.08	0.75	77.00
15	94	62	65.96	21	22.34	6	6.38	5	5.32	3.49	0.77	87.25
16	92	58	63.04	34	36.96	0	0.00	0	0.00	3.63	0.74	90.75
17	90	46	51.11	42	46.67	2	2.22	0	0.00	3.49	0.69	87.25
18	90	0	0.00	0	0.00	0	0.00	0	0.00	0.00	0.00	0.00
Total	1580	822	883.67	604	652.79	98	104.07	56	59.47	57.59	11.97	1439.75
Average Score	93	48	51.61	36	38.71	6	6.45	3	3.23	3.39	0.69	84.75

FIGURE 6.1 FIRST DOCUMENT: GENERAL INSTRUCTIONS TO BIDDERS

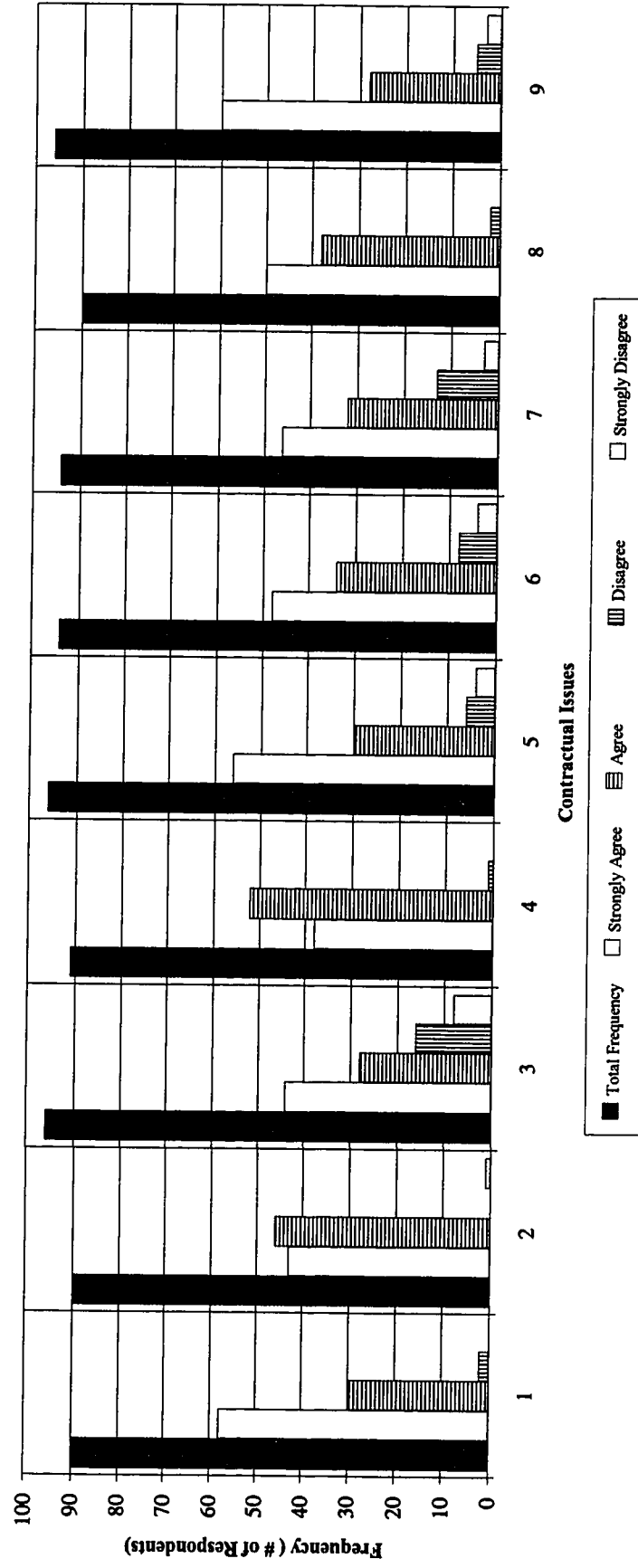


FIGURE 6.1 FIRST DOCUMENT: GENERAL INSTRUCTIONS TO BIDDERS

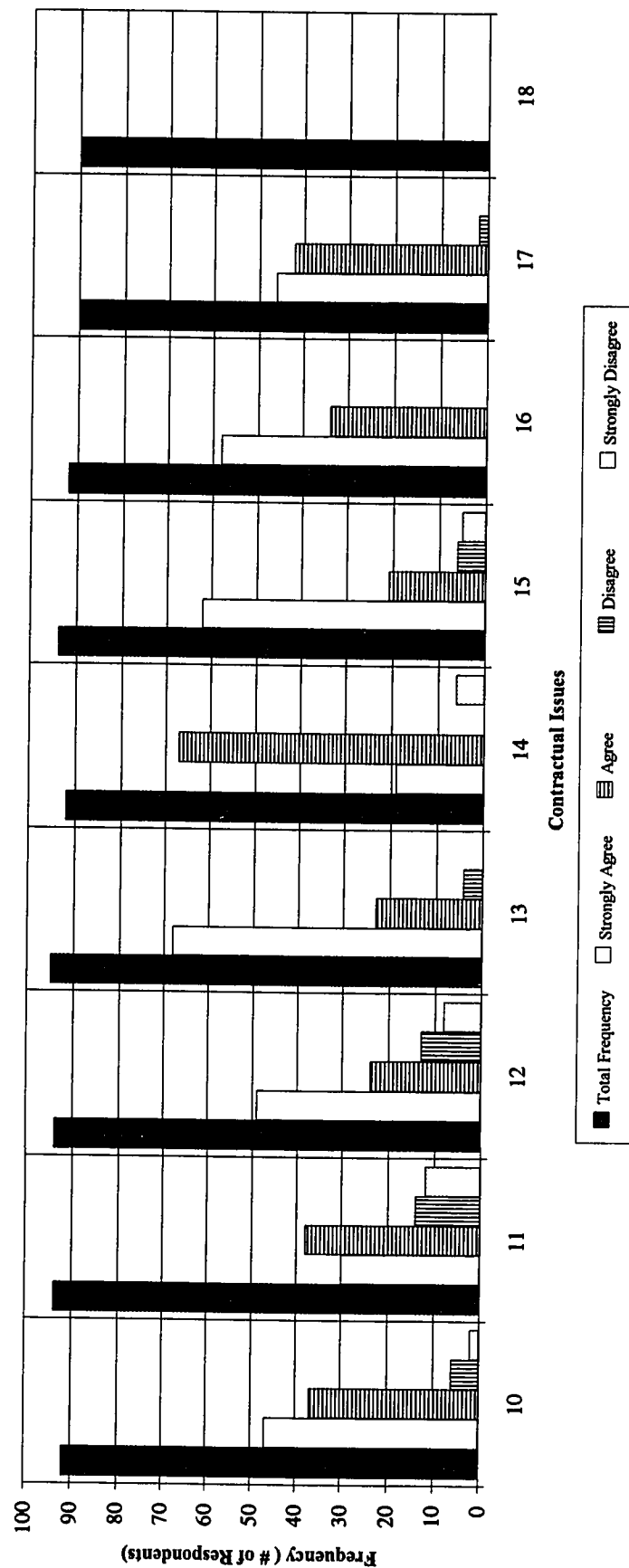
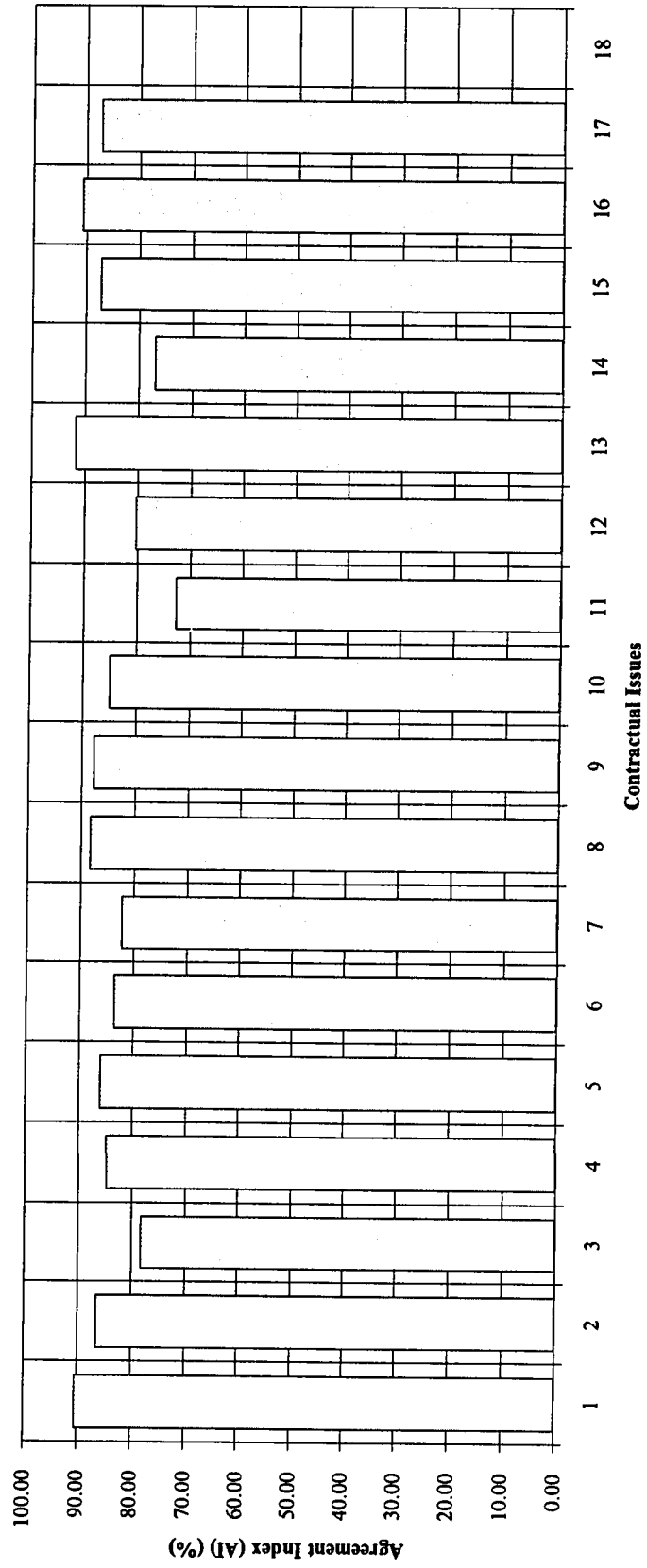


FIGURE 6.1 FIRST DOCUMENT: GENERAL INSTRUCTIONS TO BIDDERS



Second Document: General Conditions:

The second document consists of fifty-six (56) contractual issues which will remain mostly unchanged, regardless of the types of maintenance contracts that might be used. It regulates and controls the general requirements, provisions and obligations that must be fulfilled by the contractor during the life span of the contract.

The second document is considered to be of primary importance, because it supports and supplements the specific conditions and scope of work of the contract. It enforces the related governmental procurement laws and regulations which contain articles that govern the procurement process and form the framework of contract administration.

The obtained results from this document, and its related contractual issues, indicated that sixty-six (66) and twenty-four (24) of the respondents have selected "strongly agree" and "agree" choices whereas, no respondents ticked the "disagree" and "strongly disagree" respectively. The mean value was equal to (3.73) and agreement index (AI) reached ninety three percent (93%) as the highest agreement index in the second document and it is for contractual issue No. Fifteen. The fifteenth contractual issue fell into "strongly disagree" range.

Furthermore, the survey results indicated that thirty-two (32) and twenty-four (24) of the respondents selected "strongly agree" and "agree" choices, whereas, twenty (20) and eighteen (18) respondents ticked the "disagree" and "strongly disagree" respectively. The mean value was equal to (2.74) and agreement index (AI) reached sixty-nine percent (69%) as the lowest agreement index in this document and it is for contractual issue No. Thirty-Six. The Thirty-Sixth contractual issue fell into "agree" range (Table 6.18) (Figure 6.2).

A detailed analysis of the results from the second document demonstrated very clearly, that the majority of the respondents (86 out of 92) supported the contractual issues of this document be incorporated in the building maintenance contract. The following is a sampling of many points that were made by the respondents which emphasize the importance of this document and also the reasons for the full support of the respondents to the second document:

- The second document ensures that all bidders are fully aware of the basic expression in the contract and this will greatly benefit both parties by reducing any dispute between them.

- It prevents an unscrupulous contractor from any attempt to play with words and expressions in order to reduce the contract scope of work.
- It protects the governmental agencies in case of title expression disputes with the contractor. Contractors are required to refer to the content stated under each major and marginal titles in order to obtain the precise meaning of the titles.
- It indicates to the contractor that the contract document is considered to be a unit and in case of contradiction between the documents, the preferences of interpretation will depend on the order of importance of each document.
- It encourages the contractor to start the work and fulfill the governmental office obligations toward contract payments. The contractor will be fully addressed to all regulations and rules that control payment.
- The second document ensures contractor seriousness and commitment to perform the required work of the contract by submitting the required guarantee value to the client.
- This document exposes to the client's supervisors team, the manner in which the contractor is going to perform the work and the implementation dates for each activity.
- The contractual issues of this document push forward the selected contractor to start the work in the designated time and to generate an official site hand-over protocol which indicates the starting date of the contract.
- It prevents the contractor from misusing the existing utilities at the site and to develop standardized rules and regulations to govern the consumption of local utilities.
- It ensures that the contractor assigns a qualified representative on the site with full authority to transact business for the contractor and notify him about the progress of the work and the governmental office requirements.
- It directs the contractor to the proper channels of communication with the governmental offices and ensures there is no other party involved in the management and supervision of the contract.

- The second document ensures that all contractors at the site, work together under a well supervised team, to achieve the most efficient contract work results.
- This document ensures the contractors compliance with the required personnel qualifications and the contractors supervisors should be able to communicate smoothly with Ministry supervisors as well as his own personnel.
- It ensures the contractors full compliance with existing governmental laws related to all aspects of the contract, such as labour, materials and customs.
- The second document ensures the contractors satisfactions of the local governmental rules and requirements related to the required permits and licenses needed to be obtained by the contractor.
- It ensures that the contractor fully performs his obligations towards the stated taxes and dues required by the local authority in the Kingdom.
- It ensures that the contractor vehicles are in good operating condition at all times and at no additional cost to the client.
- It ensures that all other parties involved in the contract are fully investigated prior to their deployment at the operational site.
- It demonstrates in general terms the contractors general obligations to be performed under the contract terms and conditions.
- It directs to the contractor, that any newly requested work by the client shall be performed as part of the contract and that the client shall compensate the contractor for all the additional expenses.
- The second document ensures that the client's supervisors instructions are fully respected by the contractor during the contract period.
- The second document demonstrates to the contractor that his progress payments are subjected to deduction if he fails to comply with contract conditions and specifications, or any other governmental contract requirements.
- The second document defines very clearly to the contractor, the authority and responsibility of his designated supervisors to his limitations.

- It ensures that the contractor's personnel and supervisors are provided with personal protection equipment necessary to protect them from work hazards they may encounter during their daily work.
- It states very precisely to the contractor, the required quantity and quality of equipment, materials and other installations to perform the work of the contract.
- It ensures that the contractor personnel qualifications and material conditions are acceptable to the requirements stated in the contract.
- It ensures the contractor's full respect to the allocated time to perform the required work of the contract and to avoid owner disturbance resulting from the contractor's delay to begin the contract work.
- It ensures that the contractor accepts in full and final settlement of all the contractor's entitlement of any kind, arising from any termination under the contract compensation rules, for all reasonable, auditable and verifiable costs.
- This document gives the client the freedom to suspend any amount of work which is considered not to be beneficial to the client, during the contract period.
- It incorporates any new work that might be needed by the client, which was not included in the original documents of the contract.
- It regulates and controls the two parties obligations in case of suspension or termination. Contractors shall take all necessary action that may be needed, or that the client may direct, for the protection and presentation of work in progress which is not included in the suspension or termination written notice.
- It specifies that the concerned governmental offices might be consulted in any dispute, controversy or claim, arising from, or relating to the contract.
- The second document ensures that the contractor will not adopt unofficial attitudes, either to obtain the bid, or during the performance of the contract work.
- It ensures that the two parties designate an appropriate address for the purpose of receiving any notice of referral to arbitration and for receiving any

further notice or documents during the course of the proceeding, unless and until they have designated, in writing, another address.

- It ensures that the contract work is performed according to stated conditions and specifications and the client's personnel are well protected against unscrupulous contractor behavior.
- It ensures that the contractor specifically acknowledges its responsibility to report to the client any valuable items found at the site, and he must respond to the client's representative's instructions in this matter.
- It standardizes the time calendar to be used in the contract to avoid any sort of misunderstanding between the two parties.
- It indicates for the contractor, the time table available for him to perform the work. The contractors attempt to work outside this time schedule will be considered as a breach of contract conditions.
- It ensures the contractors compliance with the required environmental protection rules. Contractors failure to abide by these rules may result in total or partial suspension of the contract.
- It guides the contractor to abide with the related governmental rules of transportation and communication and to restrict his work to the designated operational site only.
- It ensures that the contractor's equipment and tools are of approved types and maintained in good condition.
- This document enforces the Ministers of Council rules related to maintenance contracts and ensures the contractors full compliance to these rules.
- It supports local agencies such as banking, insurance and real estate services, by giving them the preferences to perform the work.
- It ensures that the contractor employs the officially approved personnel to perform the work.
- It ensures that the contractor's personnel's accommodation are in good condition to avoid any sort of communicable disease that will affect, directly, the client's supervising team.
- It ensures that the contractor's site office is well prepared to facilitate the client and the contractor's work at the site.
- This document standardizes the required certificates to be submitted by the contractor to satisfy the conditions of the contracts.

Table 6.18 Second Document: General Conditions

Contractual Issues Number	Number of Respondents	Strongly Agree		Agree		Disagree		Strongly Disagree		Mean	Standard Deviation	Agreement Index
		Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent			
1	92	60	65.22	32	34.78	0	0.00	0	0.00	3.65	0.76	91.25
2	92	36	39.13	32	34.78	24	26.09	0	0.00	3.13	0.61	78.25
3	92	45	48.91	28	30.43	19	20.66	0	0.00	3.28	0.65	82.00
4	92	42	45.65	34	36.96	16	17.39	0	0.00	3.28	0.64	82.00
5	92	59	64.13	33	35.87	0	0.00	0	0.00	3.64	0.75	91.00
6	92	36	39.13	52	56.52	4	4.35	0	0.00	3.35	0.67	83.75
7	94	56	59.57	32	34.04	6	6.39	0	0.00	3.53	0.82	88.25
8	94	39	41.49	50	53.19	5	5.32	0	0.00	3.36	0.67	84.00
9	94	61	64.89	33	35.11	0	0.00	0	0.00	3.65	0.75	91.25
10	90	38	42.22	52	57.78	0	0.00	0	0.00	3.42	0.69	85.50
11	90	54	60.00	36	40.00	0	0.00	0	0.00	3.60	0.73	90.00
12	90	64	71.11	26	28.89	0	0.00	0	0.00	3.71	0.79	92.75
13	90	32	35.56	46	51.11	12	13.33	0	0.00	3.22	0.64	80.50
14	90	46	51.11	39	43.33	5	5.56	0	0.00	3.46	0.69	86.50
15	90	66	73.33	24	26.67	0	0.00	0	0.00	3.73	0.80	93.25
16	92	49	53.26	43	46.74	0	0.00	0	0.00	3.53	0.71	88.25
17	92	33	35.87	46	50.00	13	14.13	0	0.00	3.22	0.63	80.50
18	92	46	50.00	46	50.00	0	0.00	0	0.00	3.50	0.69	87.50
19	92	28	30.43	38	41.30	26	28.27	0	0.00	3.02	0.59	75.50
20	94	50	53.19	44	46.81	0	0.00	0	0.00	3.53	0.71	88.25
21	94	25	26.59	62	65.96	7	7.45	0	0.00	3.19	0.69	79.75
22	94	32	34.04	57	60.64	5	5.32	0	0.00	3.29	0.68	82.25
23	94	23	24.47	58	61.70	13	13.83	0	0.00	3.11	0.66	77.75
24	94	32	34.04	36	38.29	16	17.02	10	10.65	2.96	0.59	74.00
25	94	26	27.66	68	72.34	0	0.00	0	0.00	3.28	0.73	82.00
26	94	44	46.81	50	53.19	0	0.00	0	0.00	3.47	0.69	86.75
27	94	40	42.55	54	57.45	0	0.00	0	0.00	3.43	0.69	85.75
28	94	56	59.57	38	40.43	0	0.00	0	0.00	3.59	0.72	89.75
29	92	32	34.78	34	36.96	16	17.39	10	10.87	2.96	0.59	74.00
30	92	35	38.04	42	45.65	8	8.69	7	7.62	3.14	0.64	78.50
31	92	53	57.61	39	42.39	0	0.00	0	0.00	3.58	0.72	89.50
32	94	52	55.32	42	44.68	0	0.00	0	0.00	3.56	0.71	89.00
33	94	39	40.43	56	59.57	0	0.00	0	0.00	3.45	0.69	86.25
34	94	25	26.59	50	53.19	19	20.22	0	0.00	3.06	0.62	76.50
35	94	65	69.15	29	30.85	0	0.00	0	0.00	3.69	0.77	92.25
36	94	32	34.04	24	25.53	20	21.28	18	19.15	2.74	0.58	68.50
37	94	23	24.47	58	61.70	13	13.83	0	0.00	3.11	0.66	77.75
38	94	37	39.36	57	60.64	0	0.00	0	0.00	3.39	0.69	84.75
39	90	62	68.89	28	31.11	0	0.00	0	0.00	3.69	0.77	92.25
40	90	29	32.22	61	67.78	0	0.00	0	0.00	3.32	0.71	83.00
41	90	34	37.78	56	62.22	0	0.00	0	0.00	3.38	0.69	84.50
42	90	12	13.33	66	73.34	12	13.33	0	0.00	3.00	0.75	75.00
43	90	30	33.33	60	66.67	0	0.00	0	0.00	3.33	0.71	83.25
44	90	23	25.56	67	74.44	0	0.00	0	0.00	3.26	0.74	81.50
45	92	36	39.13	56	60.87	0	0.00	0	0.00	3.39	0.69	84.75
46	92	21	22.83	71	77.17	0	0.00	0	0.00	3.23	0.76	80.75
47	92	18	19.57	58	63.04	16	17.39	0	0.00	3.02	0.67	75.50
48	92	28	30.43	64	69.57	0	0.00	0	0.00	3.30	0.72	82.50
49	94	36	38.29	58	61.71	0	0.00	0	0.00	3.38	0.69	84.50
50	94	32	34.04	62	65.96	0	0.00	0	0.00	3.34	0.70	83.50
51	90	29	32.22	61	67.78	0	0.00	0	0.00	3.32	0.71	83.00
52	90	29	32.22	61	67.78	0	0.00	0	0.00	3.32	0.71	83.00
53	90	21	23.33	69	76.67	0	0.00	0	0.00	3.23	0.75	80.75
54	90	25	27.78	65	72.22	0	0.00	0	0.00	3.28	0.73	82.00
55	90	21	23.33	69	76.69	0	0.00	0	0.00	3.23	0.75	80.75
56	90	0	0.00	0	0.00	0	0.00	0	0.00	0.00	0.00	0.00
Total	5068	2097	2274	2652	2880.5	275	297.24	45	48.29	183.83	38.36	4,595.75
Average Score	92	38	41.34	48	52.17	5	5.43	1	1.09	3.34	0.67	83.50

FIGURE 6.2 SECOND DOCUMENT: GENERAL CONDITIONS

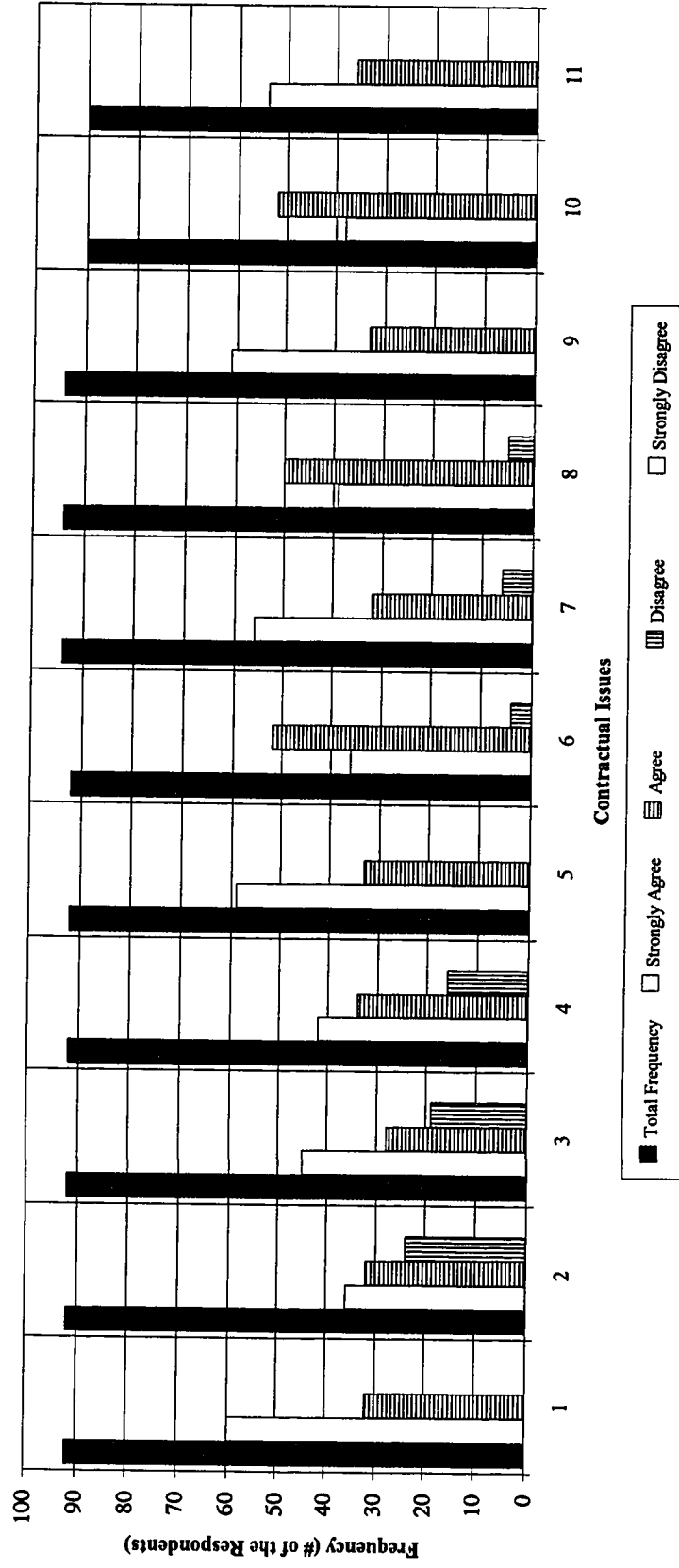


FIGURE 6.2 SECOND DOCUMENT: GENERAL CONDITIONS

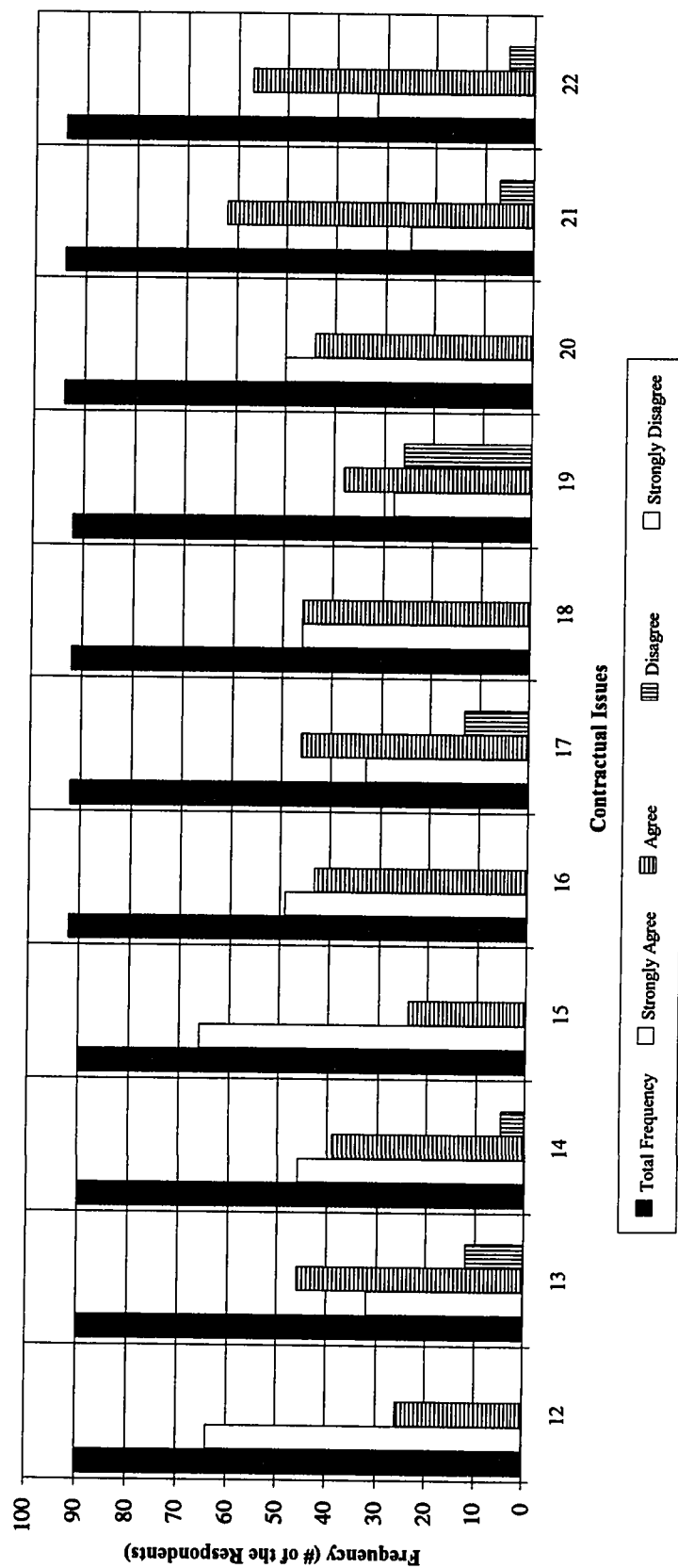


FIGURE 6.2 SECOND DOCUMENT: GENERAL CONDITIONS

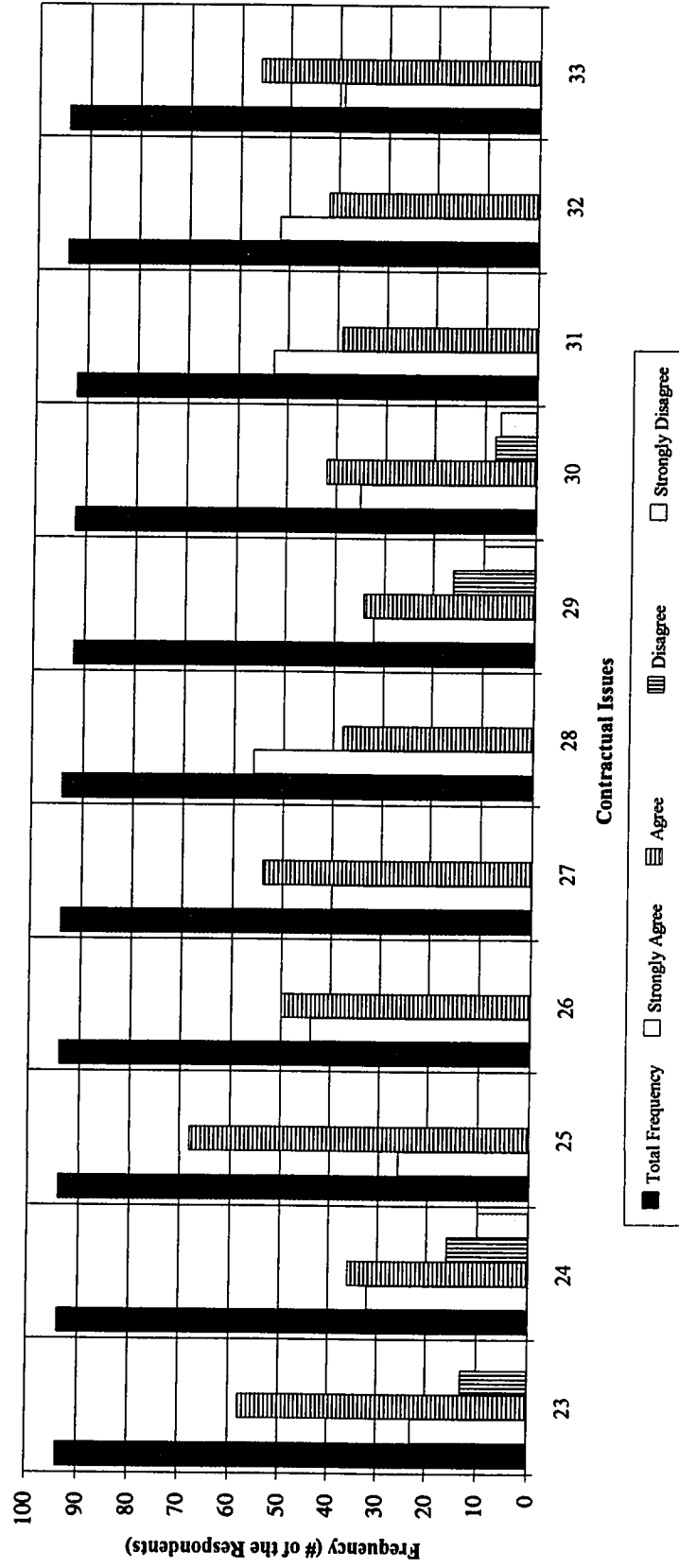


FIGURE 6.2 SECOND DOCUMENT: GENERAL CONDITIONS

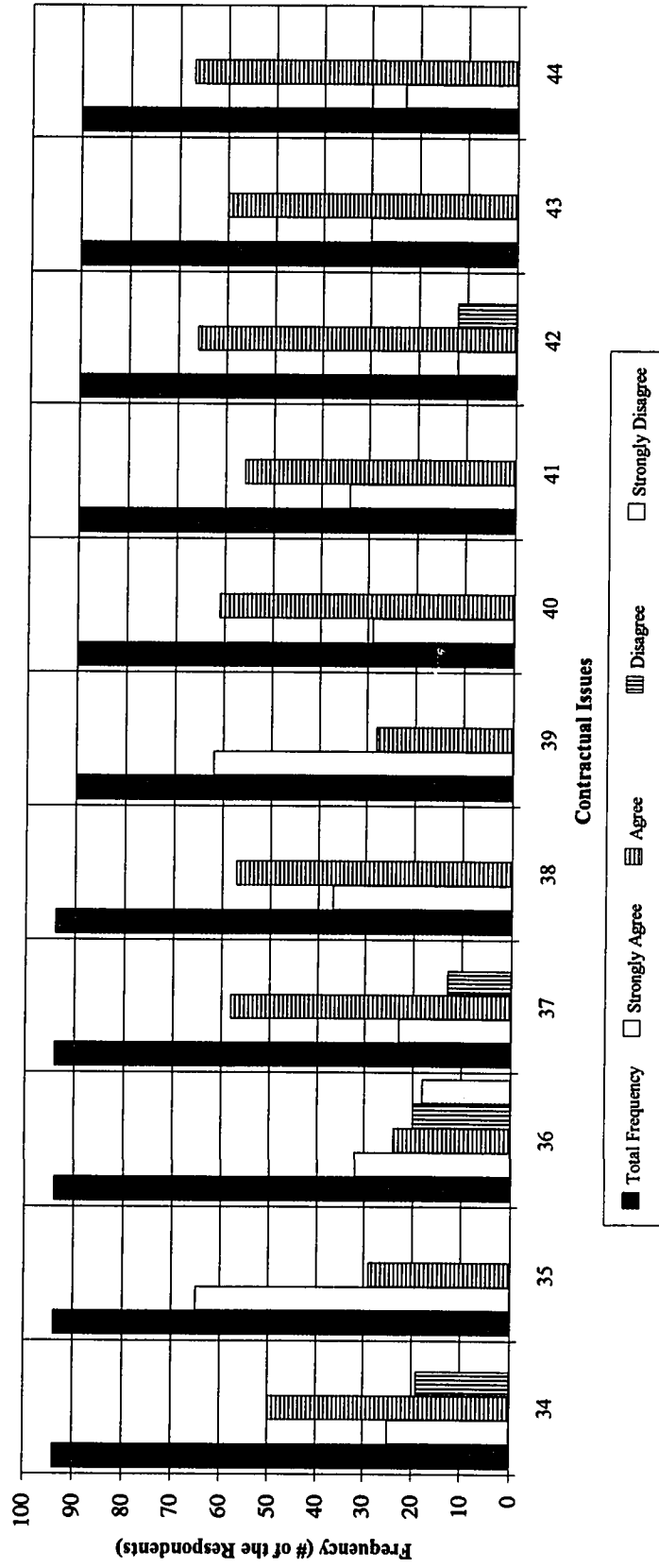


FIGURE 6.2 SECOND DOCUMENT: GENERAL CONDITIONS

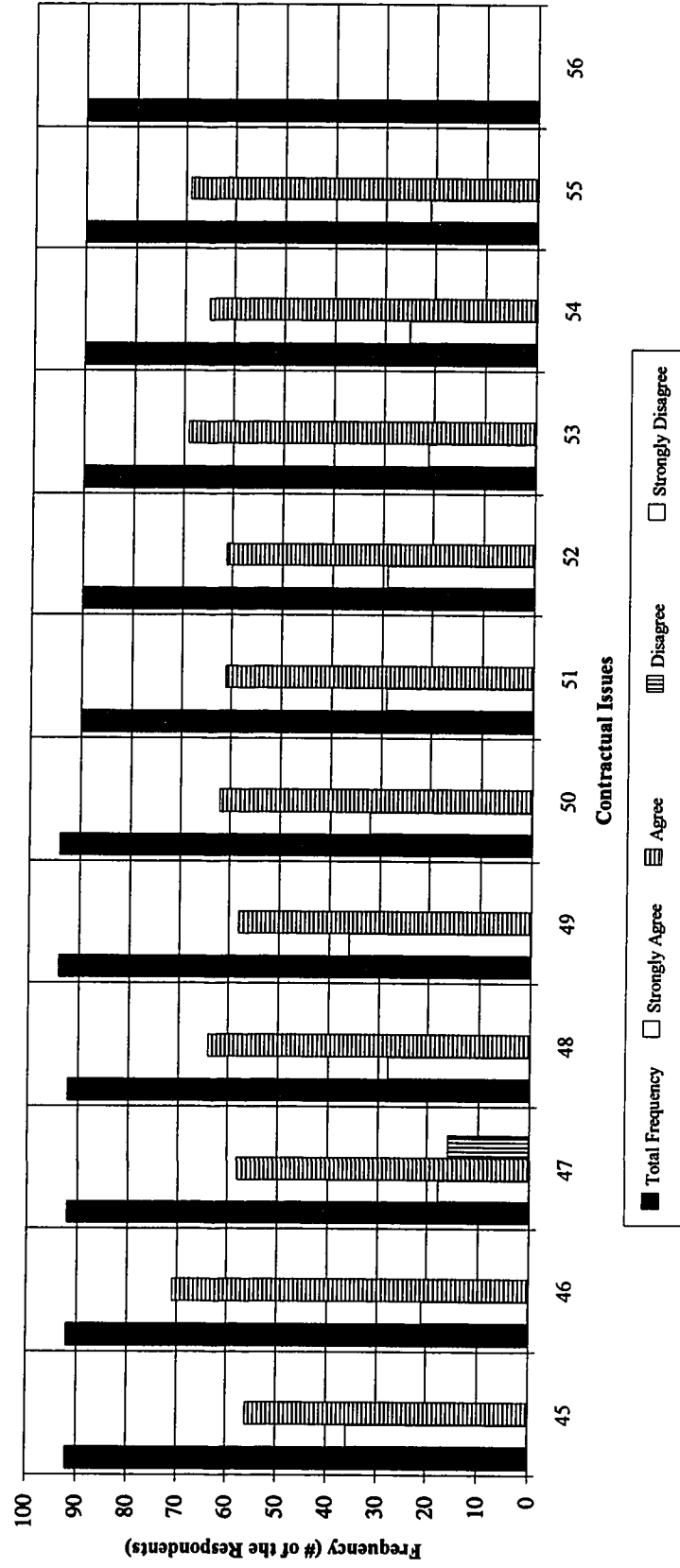


FIGURE 6.2 SECOND DOCUMENT: GENERAL CONDITIONS

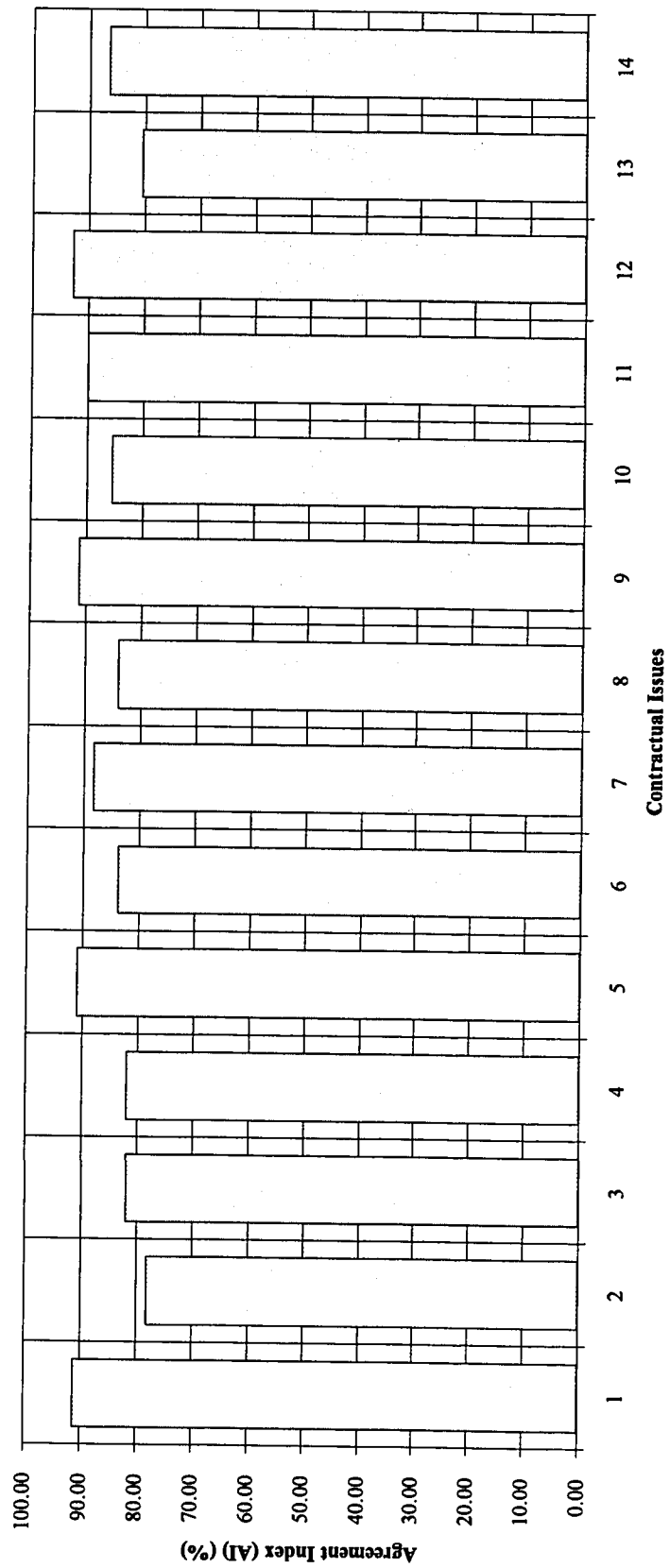


FIGURE 6.2 SECOND DOCUMENT: GENERAL CONDITIONS

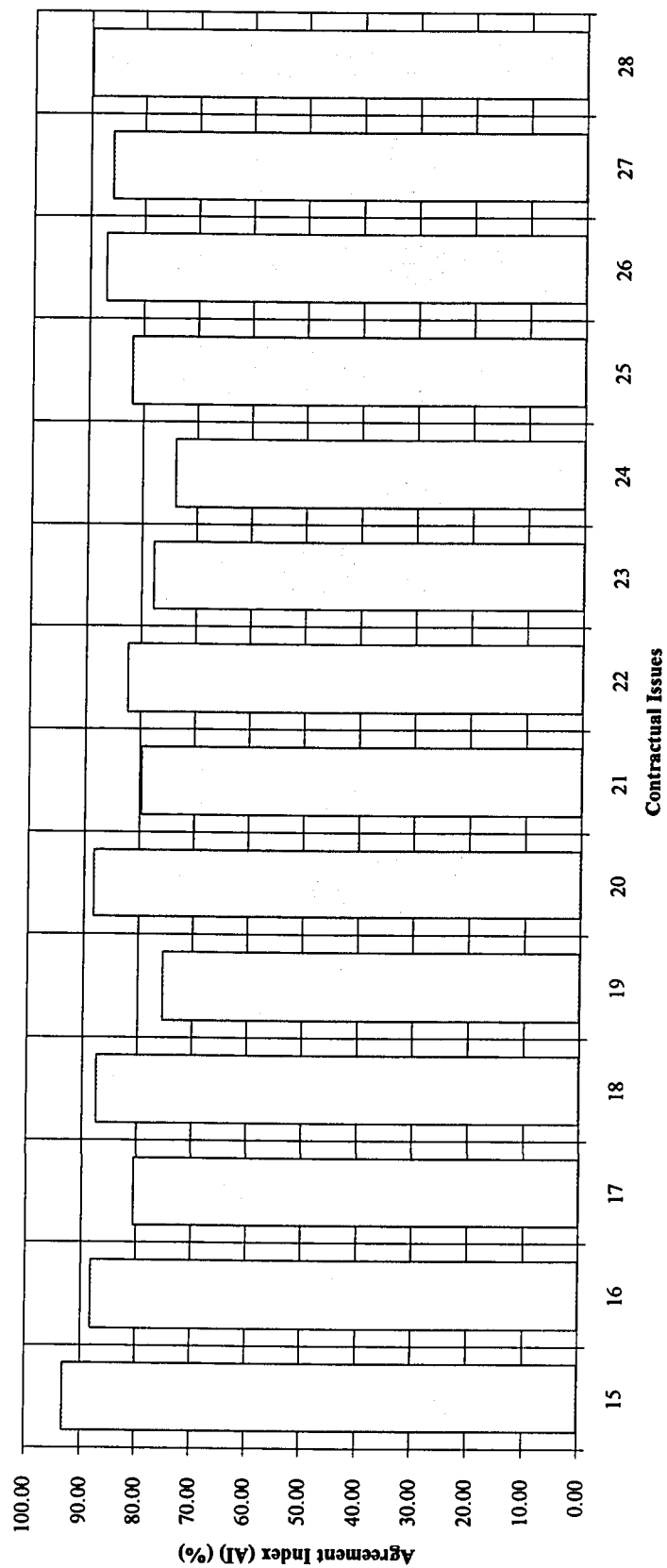


FIGURE 6.2 SECOND DOCUMENT: GENERAL CONDITIONS

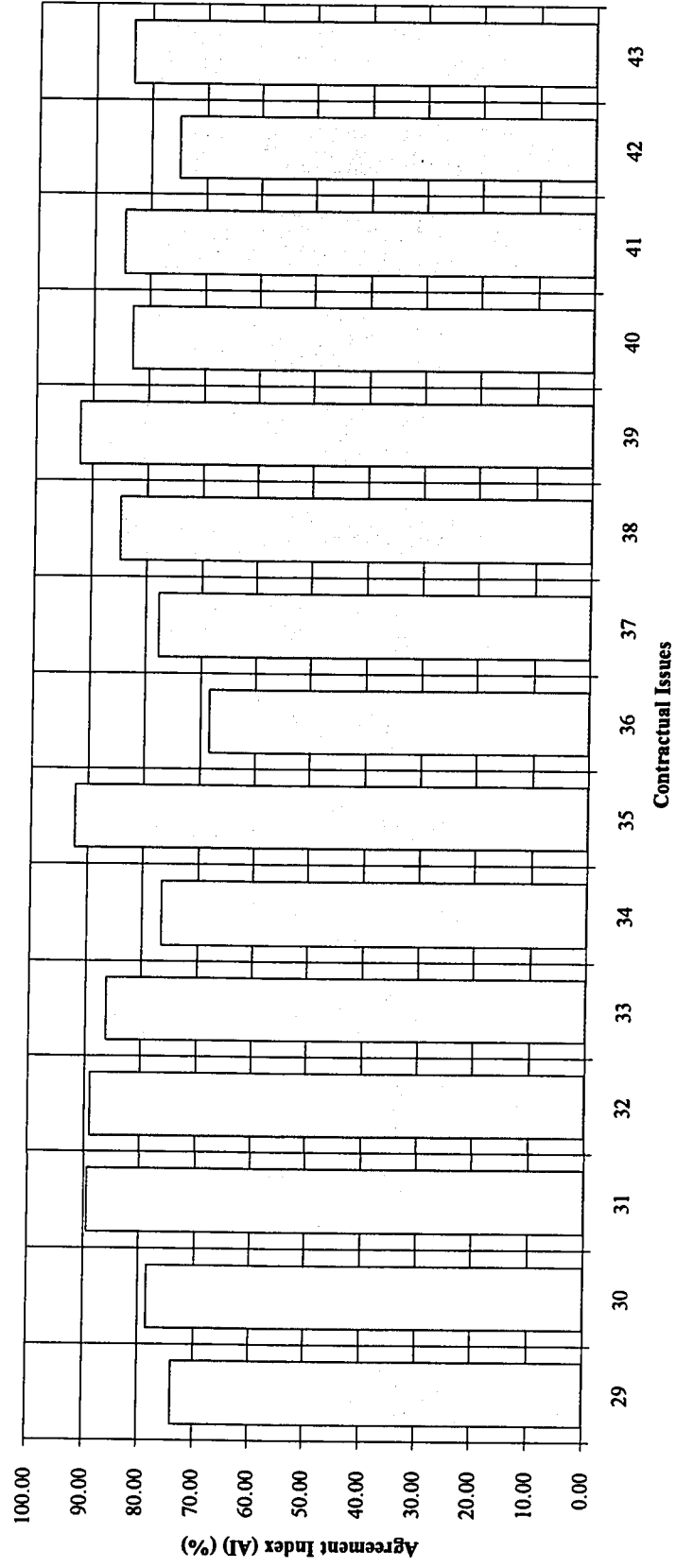
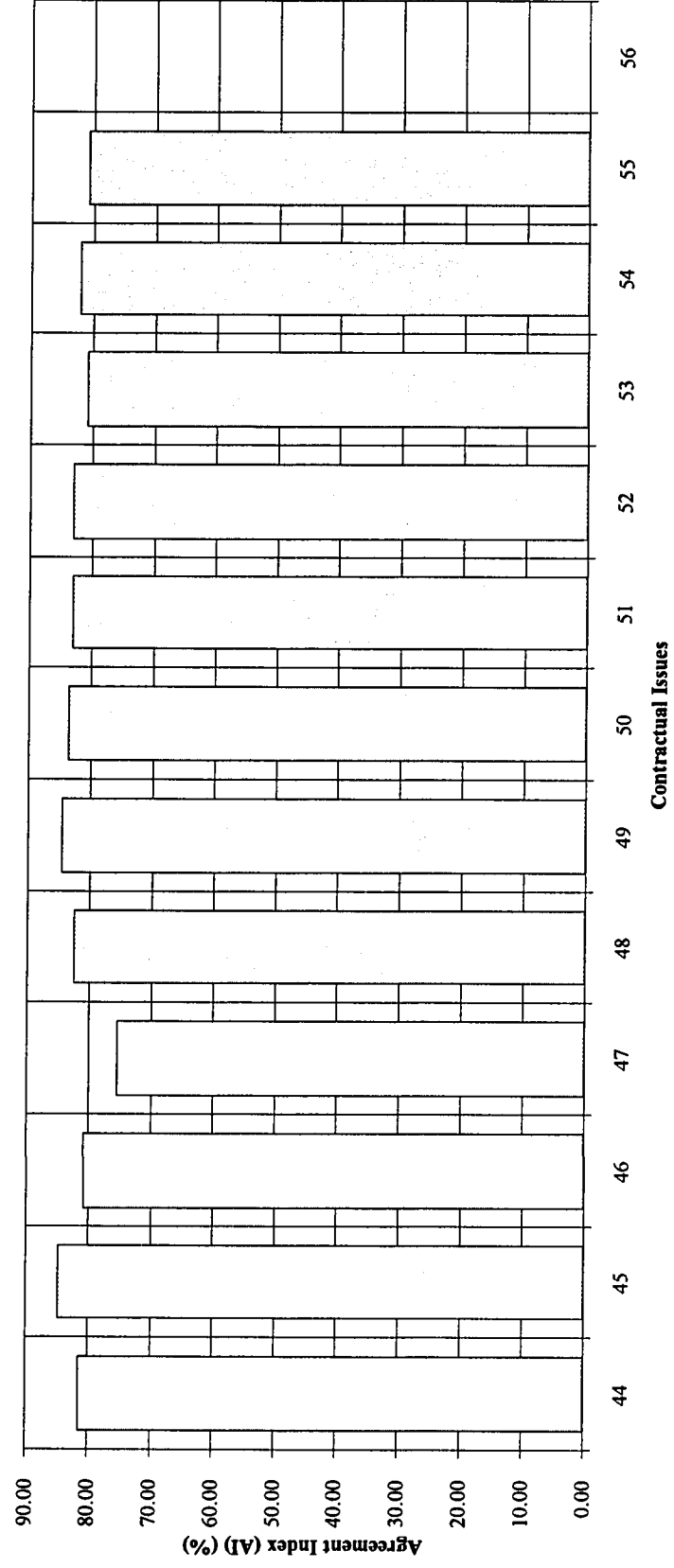


FIGURE 6.2 SECOND DOCUMENT: GENERAL CONDITIONS



Third Document: Specific Conditions and Scope of Work:

This document consists of a set of contractual issues to describe the contract work and related specific conditions in detailed form. It includes the work requirements, contractor's personnel qualifications, administration procedures, required procurement and supply, quality control requirements, the required maintenance work, the operation of existing systems, janitorial work, periodic reports, rules related to property damages and other contract attachments.

This document is considered to be of primary importance to the building maintenance contract supply, because it covers in detail, the required work to be performed by the contractor and the expected level of maintenance to be achieved within the contract conditions and specifications.

The results obtained from this document and its related contractual issues indicated that fifty-seven (57) and thirty-five (35) of the respondents have selected "strongly agree" and "agree" choices respectively, whereas, no respondents ticked the "disagree" and "strongly disagree" choices respectively. The mean value was equal to (3.62) and agreement index (AI) reached ninety one percent (91%) as the highest agreement index in the third document and it is for contractual issue No. (2.2). The contractual issue No. (2.2) fell into "strongly agree" range. Furthermore, the survey indicated that twenty seven (27) and thirty four (34) of the respondents selected "strongly agree" and "agree" choices whereas, twenty three (23) and six (6) respondents ticked the "disagree" and "strongly disagree" choices respectively. The mean value was equal to (2.91) and agreement index (AI) reached seventy three percent (73%) as the lowest agreement index in the third document and it is for contractual issue No. (4.4). The contractual issue No. (4.4) fell into "agree" range (Table 6.19) (Figure 6.3).

A detailed analysis of the results gathered in this document, demonstrated quite clearly that the majority of the respondents (85 out of 97) supported the contractual issues of the third document to be included in the building maintenance contract. The following is a sampling of many points that were made by the respondents which emphasize the importance of this document and also the reasons for the full support of the respondents to the contractual issues of this document:

- This document ensures that both parties be fully familiarized with the most important contract information that must be mentioned in all notices and proclamation.

- It explains broadly to all parties involved in the contract, the required work to be performed by the contractor and the location of the work site.
- It defines in specific terms the scope of work to be accomplished by the contractor and it may describe or reference the designated specifications, standard and other documents which the contractor must satisfy or adhere to, in the performance of the work.
- It ensures that all prospective bidders obtain as much information as possible to assist them in the preparation of their bids.
- The third document defines the most important technical terminology that is frequently used by both parties during the contract performance and to avoid any sort of dispute or controversy between the contracted parties.
- It defines the required performance and quality control measures to be achieved in the maintenance contract.
- It ensures that the contracted parties agree statistically about the volume of the work required to be performed under the maintenance contract.
- It ensures that the contractor assigns the most qualified personnel and may be required under the conditions of the maintenance contracts, to consult other qualified personnel to support his own staff in the performance of the work.
- The third document ensures that the contractor's vehicles and other equipment are provided with necessary fuel and oil and shall be kept in a clean and well-maintained condition at all times, to the satisfaction of the client's representative.
- It ensures that the contractor's personnel, performing the work, shall be physically fit and free from any disease. Also the contractor's personnel shall comply with all applicable client safety and work regulations.
- It ensures that the contractor's expatriate personnel shall obtain the required passports, visas, and permits necessary to enter into and exit from Saudi Arabia.
- It ensures that the contractor employ a good administrative system and develops a standardized format (work order) to facilitate the contractor's and client's technical contact.
- It helps the contractor to develop a technical data bank to be used by the client to evaluate the contractor performance and to ensure that all kinds of administrative contract between both parties are well documented.

- This document ensures that the contractor procurements and supplies system is clearly defined and well organized and ensures that the contractor erects the necessary supporting facilities such as warehouses, offices and stores.
- It determines the minimum level of materials and supplies that the contractor may be required to maintain at the site stores, and to define client and contractor responsibilities and obligations toward procurement and supplies.
- It demonstrates to the contractor that his maintenance performance at the site is constantly monitored by the client's quality control department and this will ensure that all site buildings, facilities and systems are properly and carefully maintained and used.
- It ensures that the contractor establishes a good safety department to satisfy client safety objectives and also to monitor the contractor compliance with the applicable Saudi Arabian government safety regulations and requirements.
- It determines the general level of expenditure on maintenance work to achieve the desired standards and to avoid large fluctuations in annual expenditure by directing the contractor to spread the large items, and any backlogs, over a period of time.
- It directs the contractor to the optimum time to carry out major repairs and improvements and to ensure that the contractor provides the minimum personnel to conduct the maintenance work.
- It ensures the contractor assigns to the work of operations the most qualified operators, according to the required qualifications stated in the contract.
- This document indicates to the contractor, the required level of cleaning to be performed at the site and to ensure that cleaning work does not interfere with the employees working activities.
- It ensures that the contractor agrees to define, indemnify and hold the client from any claims, expenses, loss, damages, fines or penalties incurred by, assessed against, or demanded from, the client, as a result of the contractor failure to fulfill the obligation set forth in the contract.

Table 6.19 Third Document: Specific Conditions and Scope of Works

Contractual Issues Number	Number of Respondents	Strongly Agree		Agree		Disagree		Strongly Disagree		Mean	Standard Deviation	Agreement Index
		Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent			
1	90	37	41.11	49	54.44	4	4.45	0	0.00	3.37	0.67	84.25
1.1	90	50	55.56	40	44.44	0	0.00	0	0.00	3.56	0.71	89.00
1.2	90	56	62.22	30	33.33	4	4.45	0	0.00	3.58	0.73	89.50
1.3	90	33	36.67	50	55.56	7	7.77	0	0.00	3.29	0.66	82.25
1.4	90	32	35.56	58	64.44	0	0.00	0	0.00	3.29	0.70	82.25
1.5	90	25	27.78	65	72.22	0	0.00	0	0.00	3.28	0.73	82.00
1.6	90	40	44.44	48	53.33	2	2.23	0	0.00	3.42	0.68	85.50
1.7	90	40	44.44	48	53.33	2	2.23	0	0.00	3.42	0.68	85.50
1.8	90	23	25.56	50	55.56	17	18.88	0	0.00	3.07	0.63	76.75
2	92	44	47.83	39	42.39	9	9.78	0	0.00	3.38	0.67	84.50
2.1	92	53	57.61	39	42.39	0	0.00	0	0.00	3.58	0.72	89.50
2.2	92	57	61.96	35	38.04	0	0.00	0	0.00	3.62	0.74	90.50
2.3	92	32	34.78	35	38.04	25	27.18	0	0.00	3.08	0.59	77.00
2.4	92	35	38.04	49	53.26	8	8.70	0	0.00	3.29	0.66	82.25
2.5	92	42	45.65	38	41.30	12	13.05	0	0.00	3.33	0.65	83.25
3	94	44	46.81	45	47.87	5	5.32	0	0.00	3.41	0.68	85.25
3.1	94	37	34.36	41	43.62	16	17.02	0	0.00	3.22	0.63	80.50
3.2	94	47	50.00	47	50.00	0	0.00	0	0.00	3.50	0.69	87.50
3.3	94	47	50.00	47	50.00	0	0.00	0	0.00	3.50	0.69	87.50
4	90	29	32.22	45	50.00	13	14.44	3	3.34	3.11	0.63	77.75
4.1	90	28	31.11	36	40.00	20	22.22	6	6.67	2.96	0.59	74.00
4.2	90	34	37.78	56	62.22	0	0.00	0	0.00	3.38	0.69	84.50
4.3	90	28	31.11	52	57.78	10	11.11	0	0.00	3.20	0.65	80.00
4.4	90	27	30.00	34	37.78	23	25.56	6	6.66	2.91	0.58	72.75
5	92	33	35.87	59	64.13	0	0.00	0	0.00	3.36	0.69	84.00
5.1	92	32	34.78	60	65.22	0	0.00	0	0.00	3.35	0.70	83.75
5.2	92	32	34.78	60	65.22	0	0.00	0	0.00	3.35	0.70	83.75
5.3	94	36	39.13	56	60.87	0	0.00	0	0.00	3.39	0.69	84.75
6	90	44	48.89	46	51.11	0	0.00	0	0.00	3.49	0.69	87.25
7	90	39	43.33	47	52.22	4	4.45	0	0.00	3.39	0.67	84.75
7.1	90	40	44.44	50	55.56	0	0.00	0	0.00	3.34	0.69	83.50
7.2	90	40	44.44	50	55.56	0	0.00	0	0.00	3.34	0.69	83.50
7.3	90	41	45.56	37	41.11	12	13.33	0	0.00	3.32	0.65	83.00
7.4	90	41	45.56	49	54.44	0	0.00	0	0.00	3.46	0.52	86.50
7.5	90	40	44.44	40	44.44	10	11.12	0	0.00	3.33	0.65	83.25
7.6	90	40	44.44	40	44.44	10	11.12	0	0.00	3.33	0.65	83.25
7.7	90	40	44.44	50	55.56	0	0.00	0	0.00	3.34	0.69	83.50
7.8	90	36	40.00	54	60.00	0	0.00	0	0.00	3.40	0.69	85.00
7.9	90	36	40.00	43	47.78	11	12.00	0	0.00	3.28	0.64	82.00
7.10	90	36	40.00	54	60.00	0	0.00	0	0.00	3.40	0.69	85.00
7.11	90	36	40.00	54	60.00	0	0.00	0	0.00	3.40	0.69	85.00
7.12	90	37	41.11	37	41.11	16	17.78	0	0.00	3.23	0.63	80.75
8	92	32	34.78	52	56.52	8	8.70	0	0.00	3.26	0.64	81.50
9	92	42	45.65	38	41.30	12	13.05	0	0.00	3.33	0.65	83.25
9.1	92	49	53.26	43	46.74	0	0.00	0	0.00	3.53	0.71	88.25
9.2	92	38	41.30	36	39.13	18	19.57	0	0.00	3.22	0.62	80.50
9.3	92	38	41.30	36	39.13	18	19.57	0	0.00	3.22	0.62	80.50
10	92	44	47.83	48	52.17	0	0.00	0	0.00	3.48	0.69	87.00
11	92	33	35.87	59	64.13	0	0.00	0	0.00	3.36	0.69	84.00
12	94	49	52.13	45	47.87	0	0.00	0	0.00	3.52	0.70	88.00
12.1	94	45	47.87	49	52.13	0	0.00	0	0.00	3.48	0.69	87.00
12.2	94	45	47.87	49	52.13	0	0.00	0	0.00	3.48	0.69	87.00
12.3	94	56	59.57	38	40.43	0	0.00	0	0.00	3.59	0.73	59.75
12.4	94	49	52.13	45	47.87	0	0.00	0	0.00	3.52	0.70	88.00
13	94	0	0.00	0	0.00	0	0.00	0	0.00	0.00	0.00	0.00
Total	4932	2119	2313.37	2500	2739.66	296	325.08	15	16.67	181.24	36.20	4501
Average Score	91	39	42.86	46	50.55	5	5.49	1	1.10	3.36	0.67	84.00

FIGURE 6.3 THIRD DOCUMENT: SPECIFIC CONDITIONS AND SCOPE OF WORKS

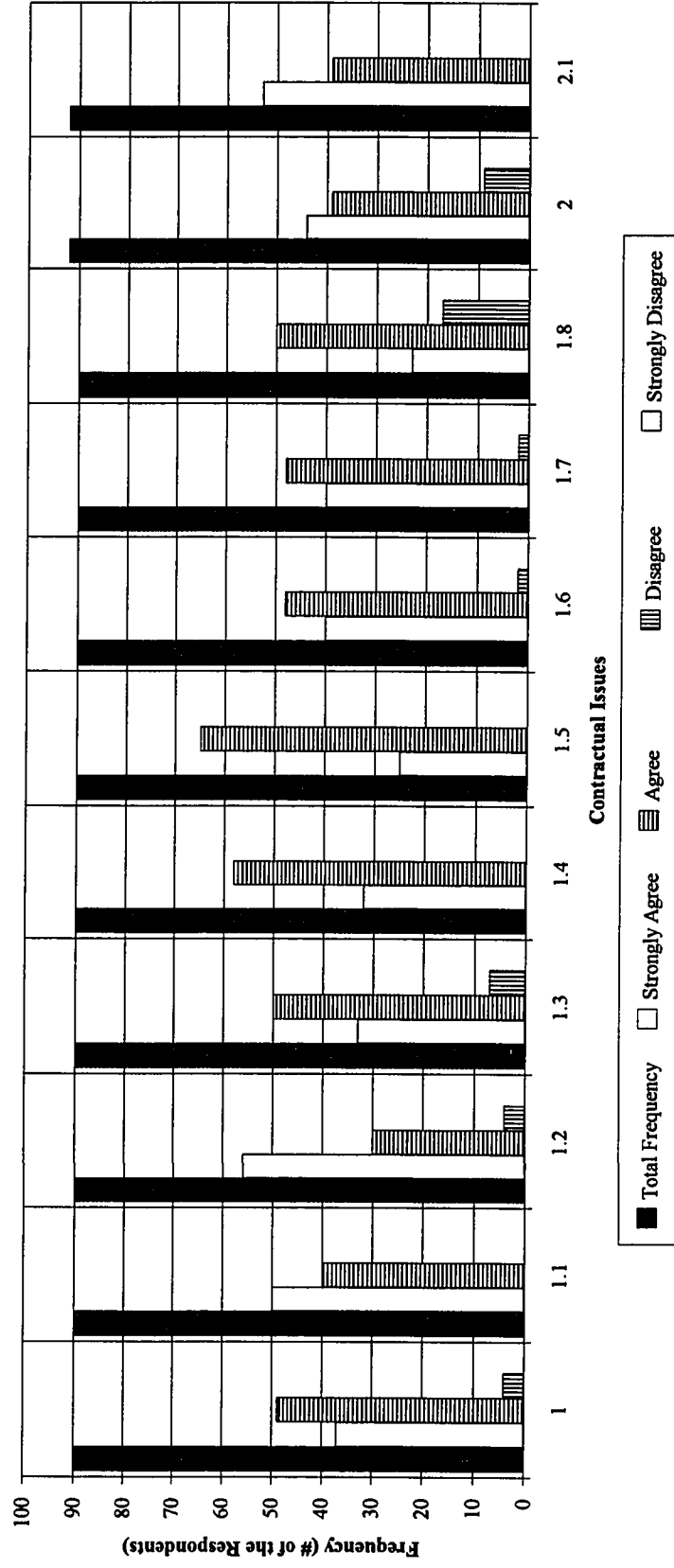


FIGURE 6.3 THIRD DOCUMENT: SPECIFIC CONDITIONS AND SCOPE OF WORKS

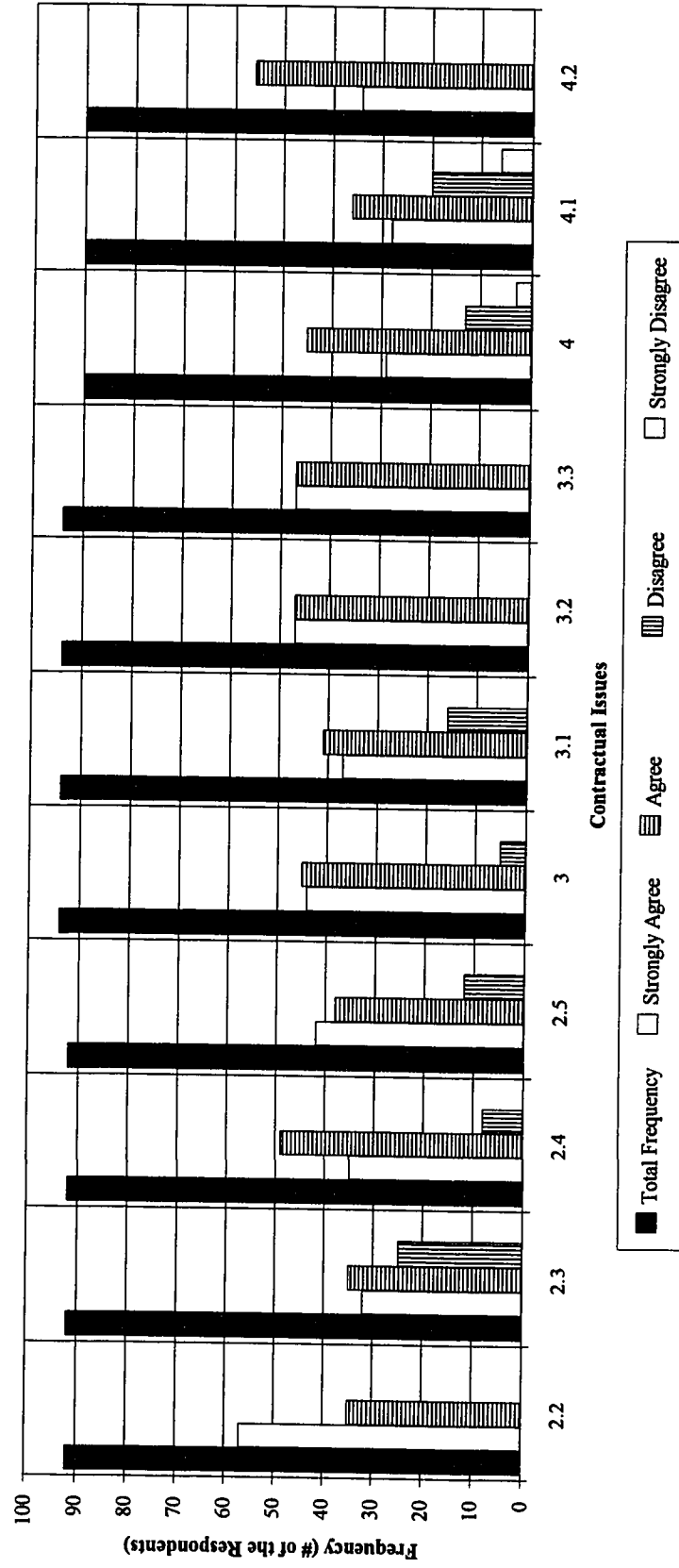


FIGURE 6.3 THIRD DOCUMENT: SPECIFIC CONDITIONS AND SCOPE OF WORKS

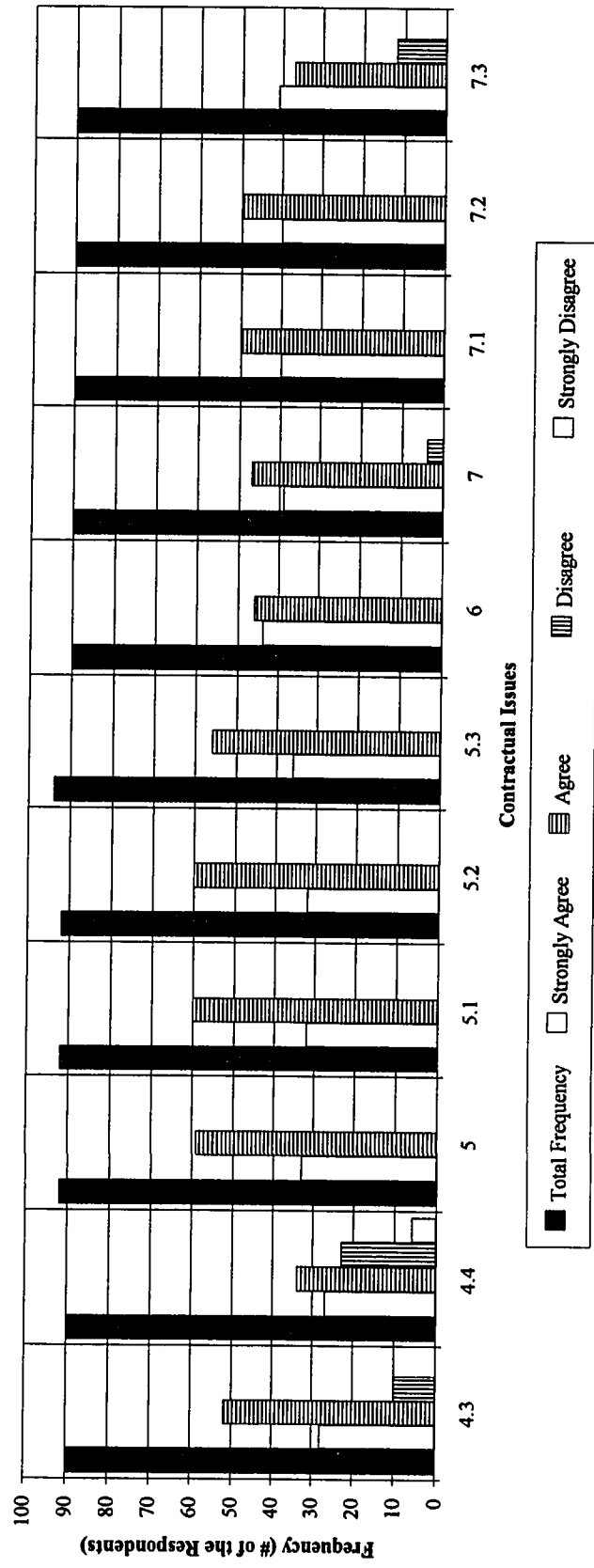


FIGURE 6.3 THIRD DOCUMENT: SPECIFIC CONDITIONS AND SCOPE OF WORKS

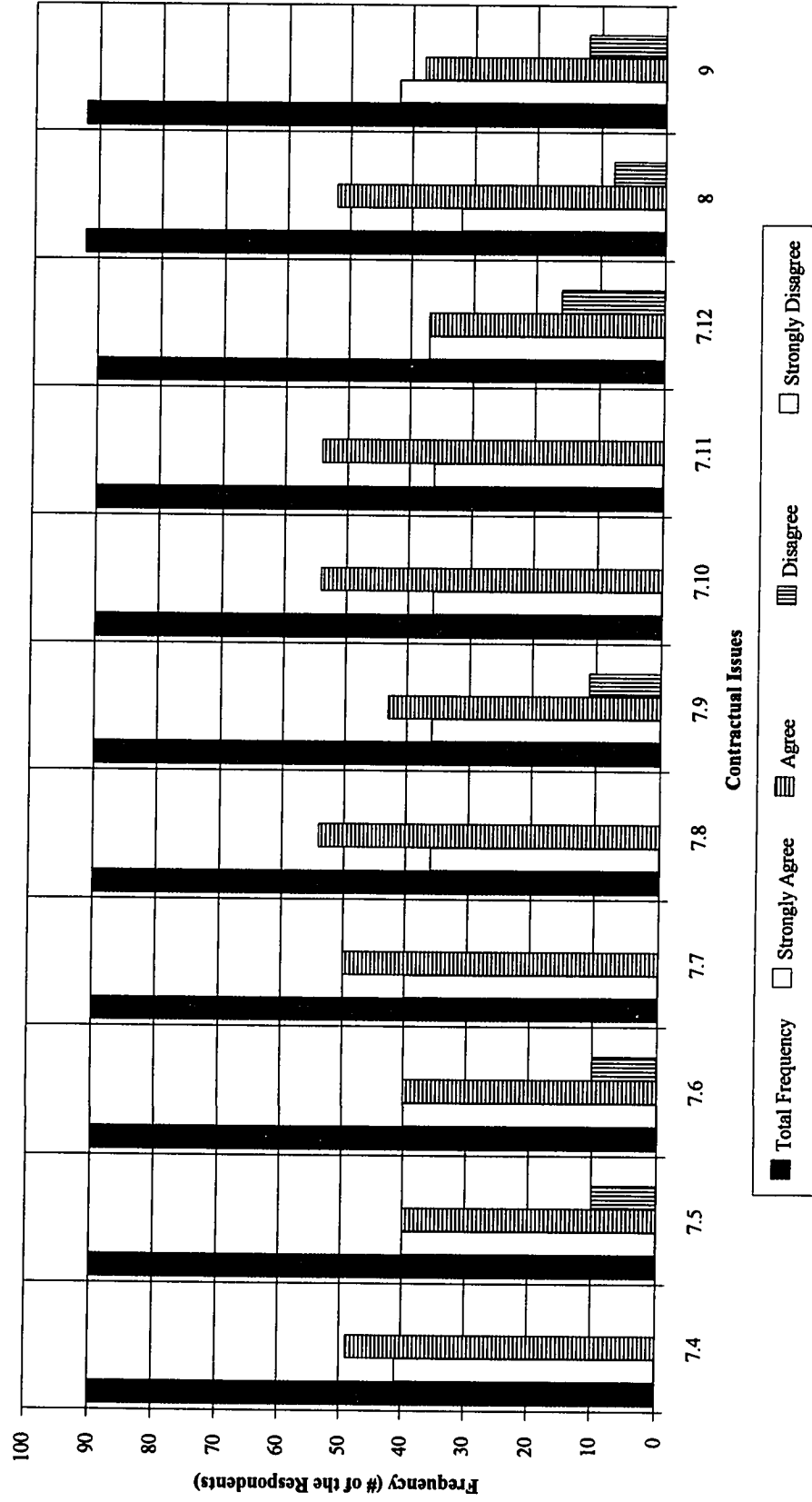


FIGURE 6.3 THIRD DOCUMENT: SPECIFIC CONDITIONS AND SCOPE OF WORKS

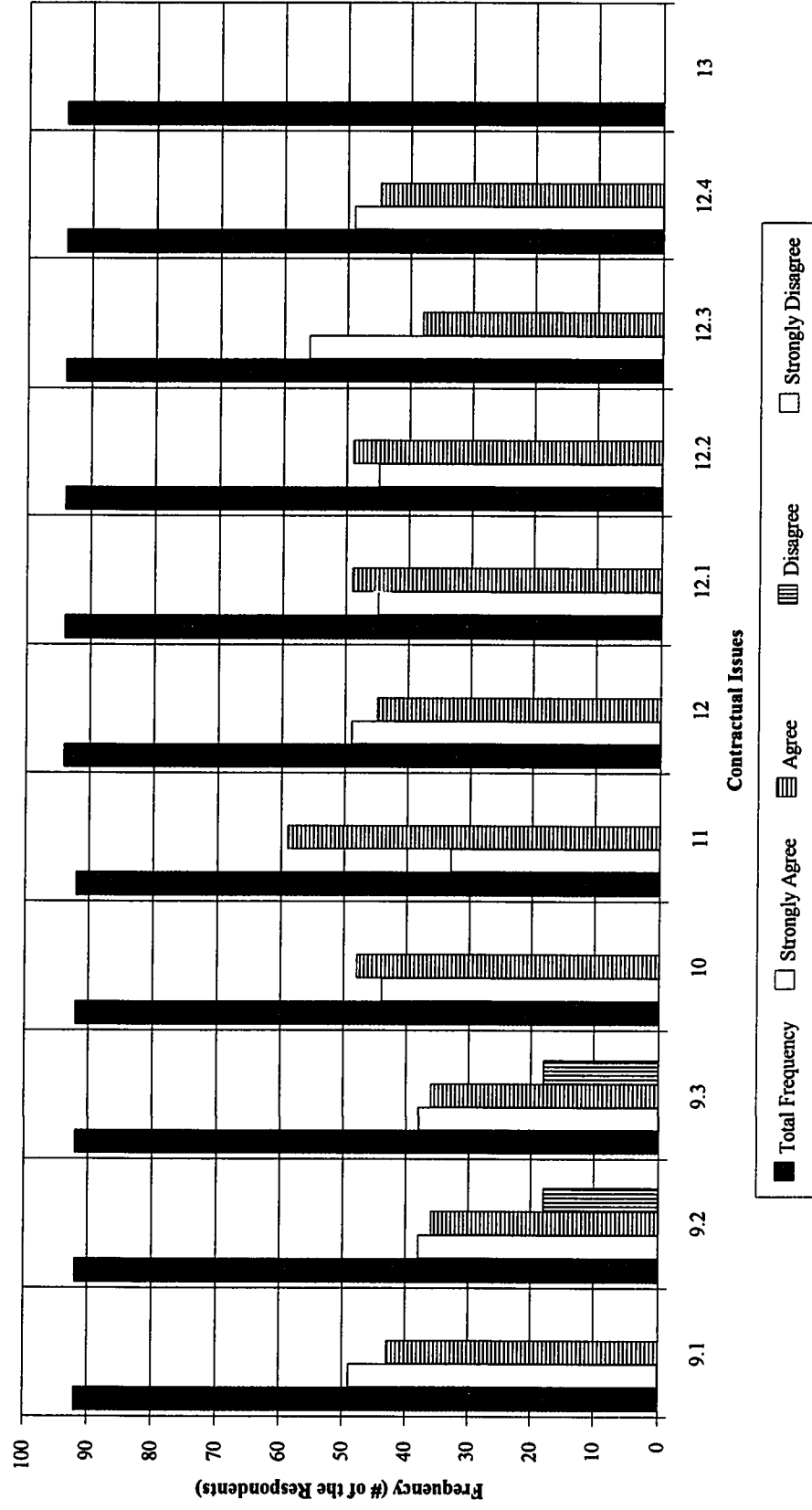


FIGURE 6.3 THIRD DOCUMENT: SPECIFIC CONDITIONS AND SCOPE OF WORKS

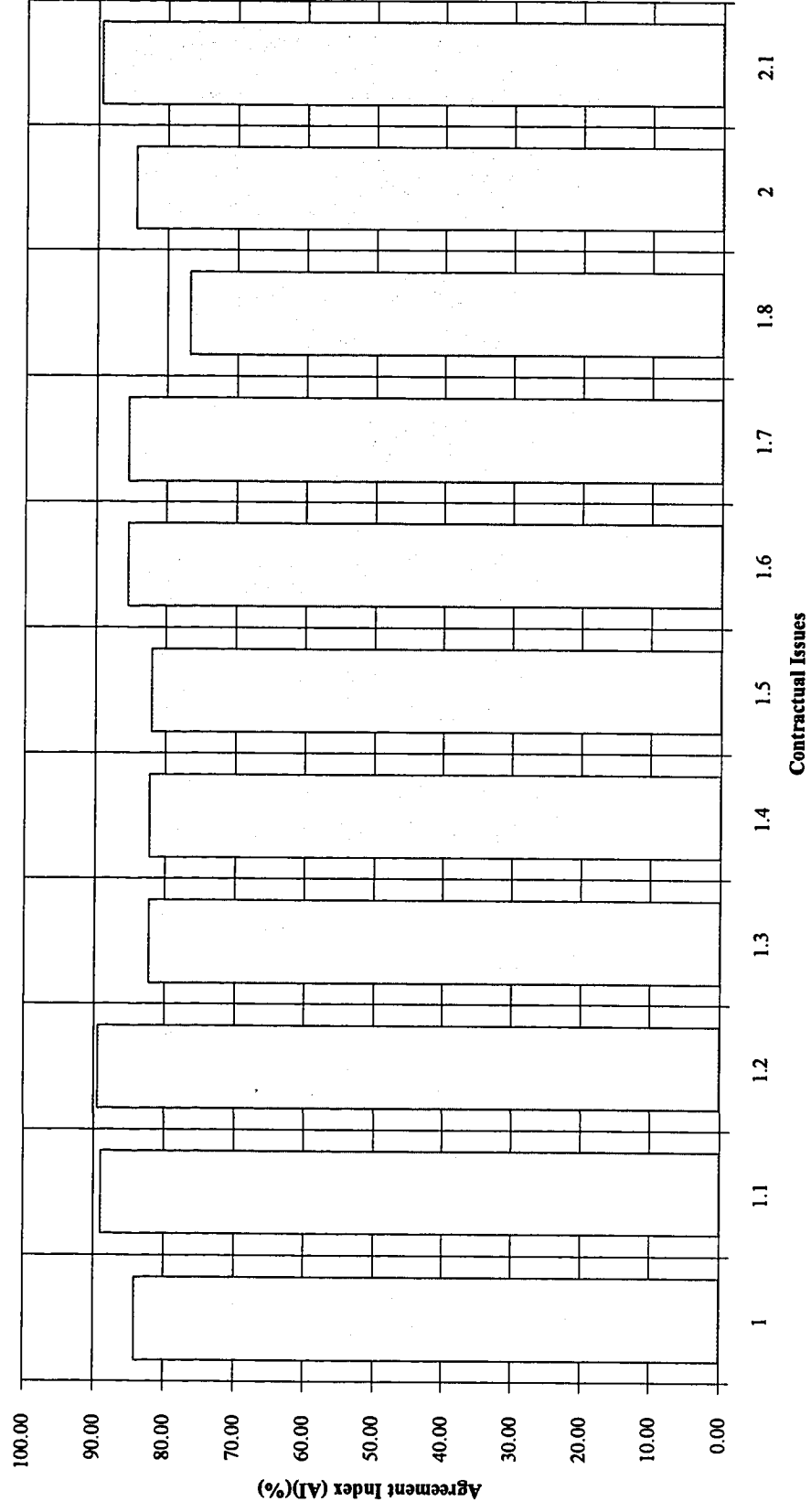


FIGURE 6.3 THIRD DOCUMENT: SPECIFIC CONDITIONS AND SCOPE OF WORKS

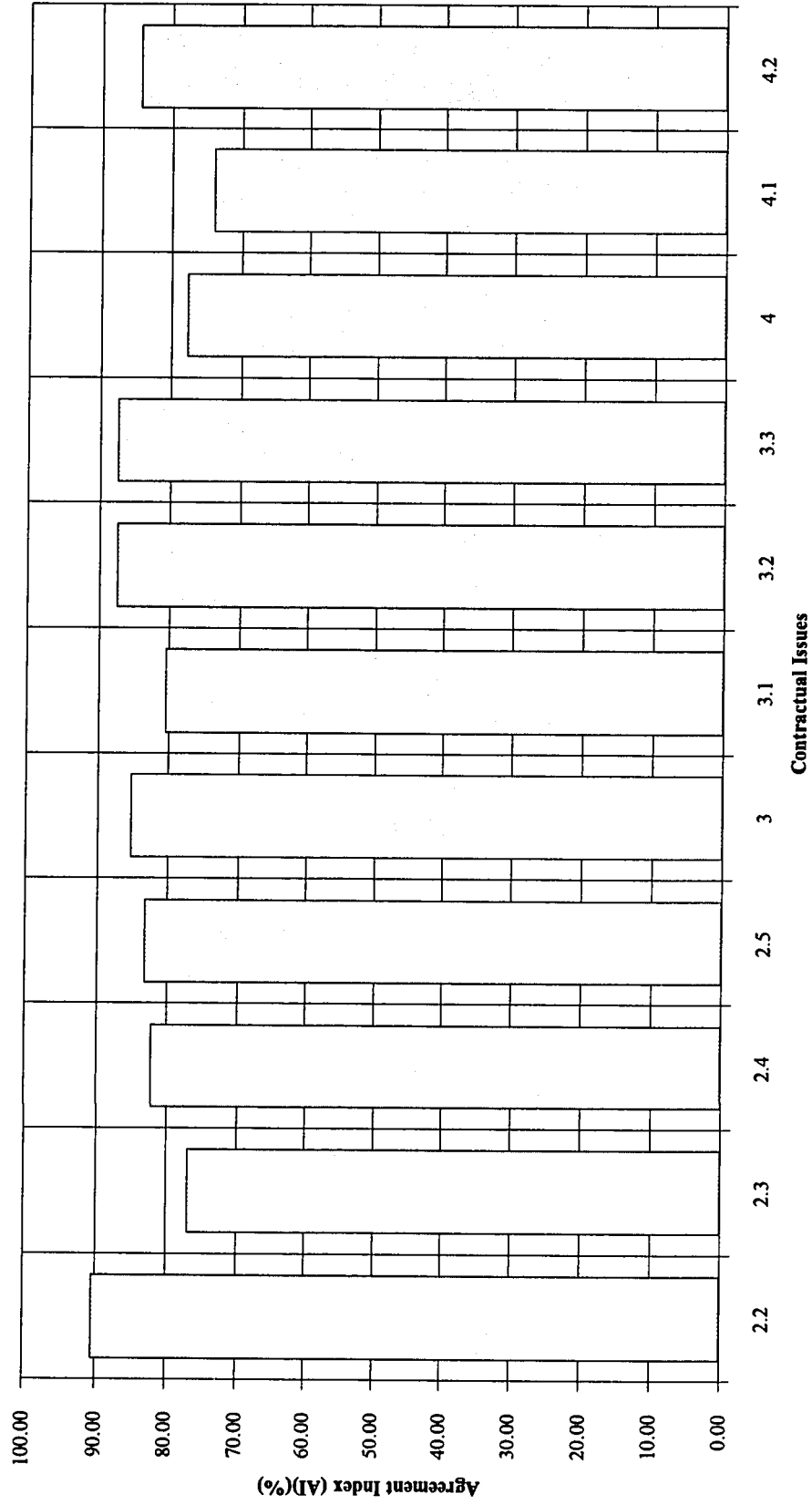


FIGURE 6.3 THIRD DOCUMENT: SPECIFIC CONDITIONS AND SCOPE OF WORKS

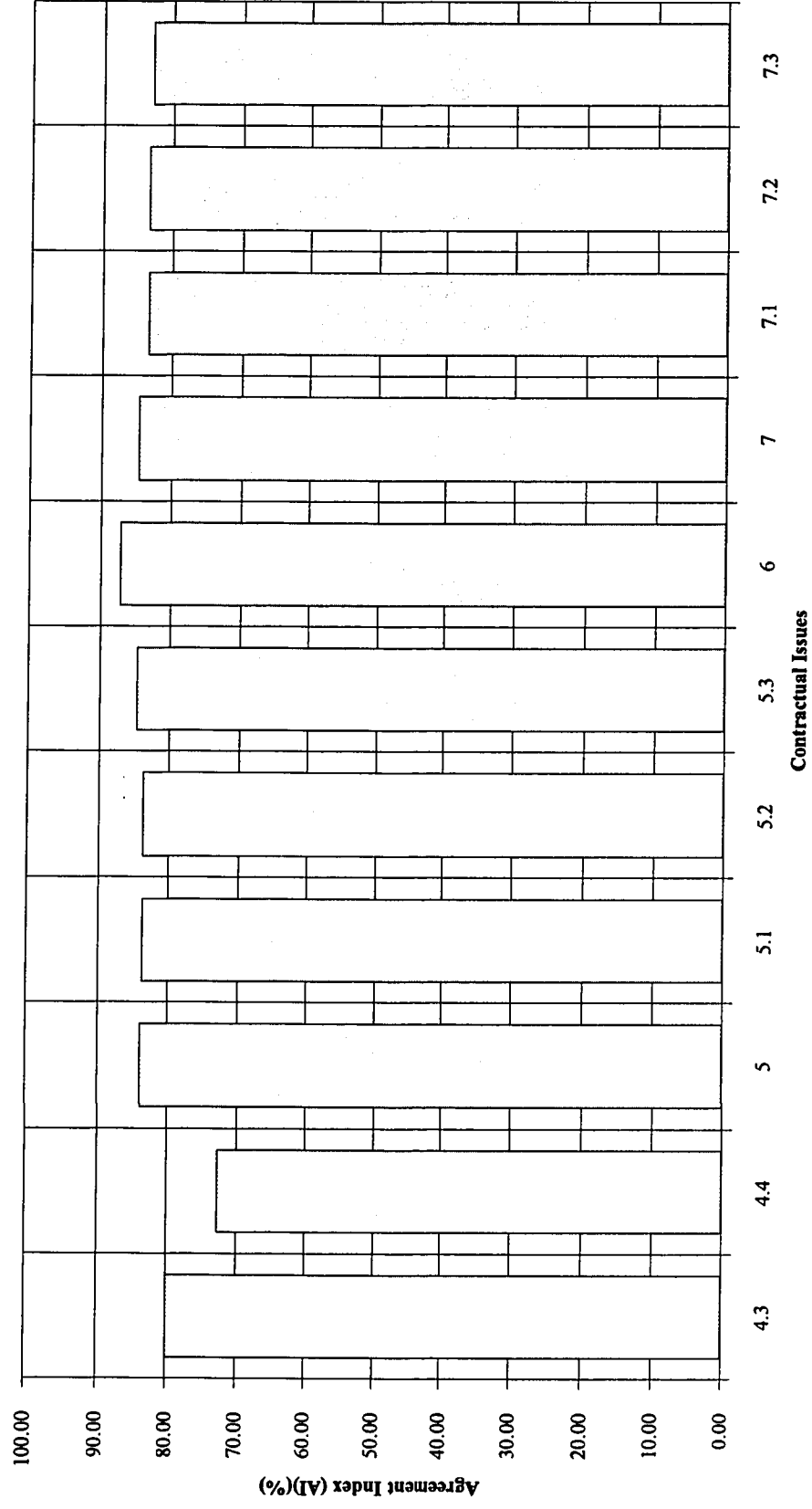


FIGURE 6.3 THIRD DOCUMENT: SPECIFIC CONDITIONS AND SCOPE OF WORKS

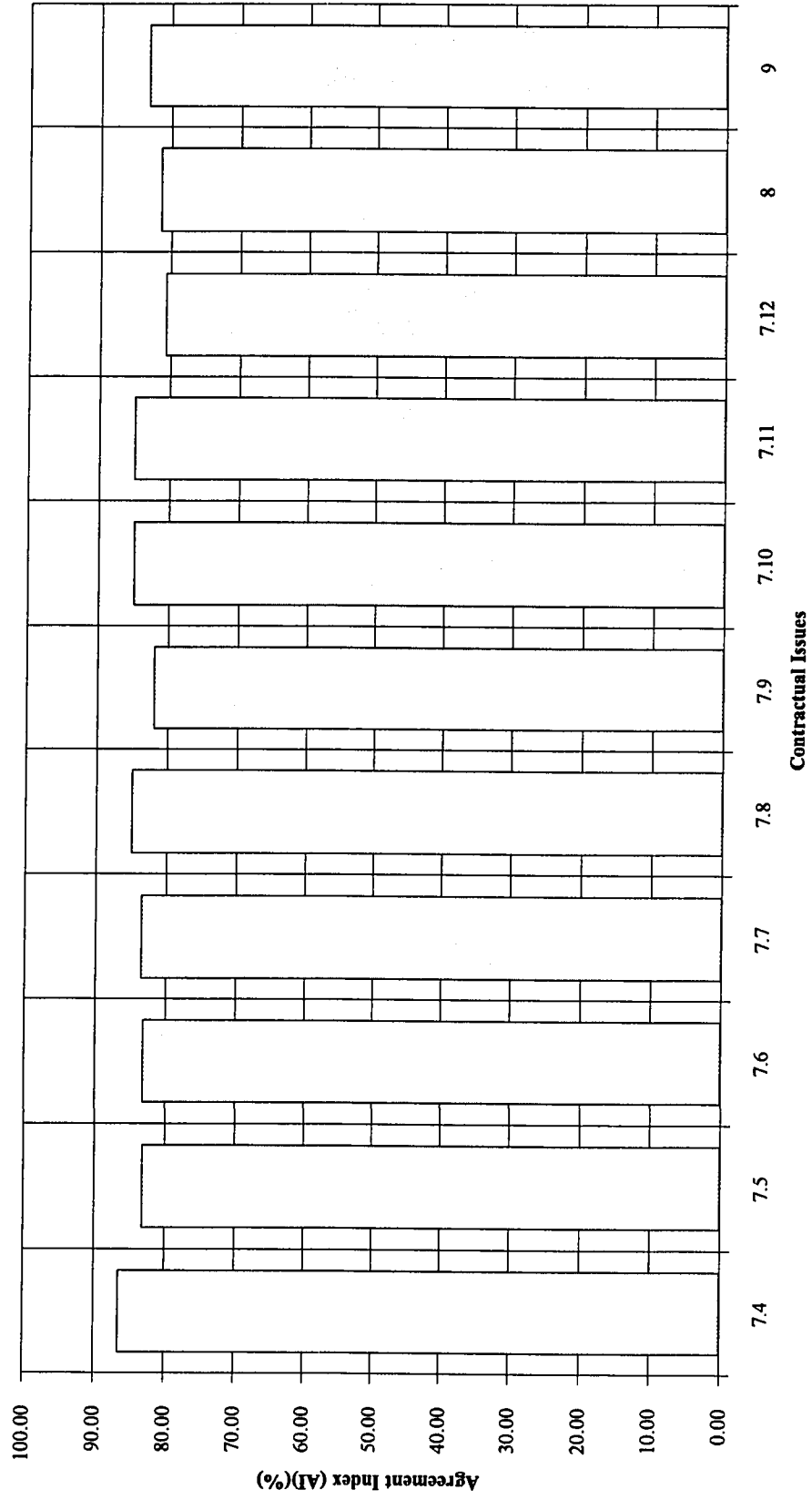
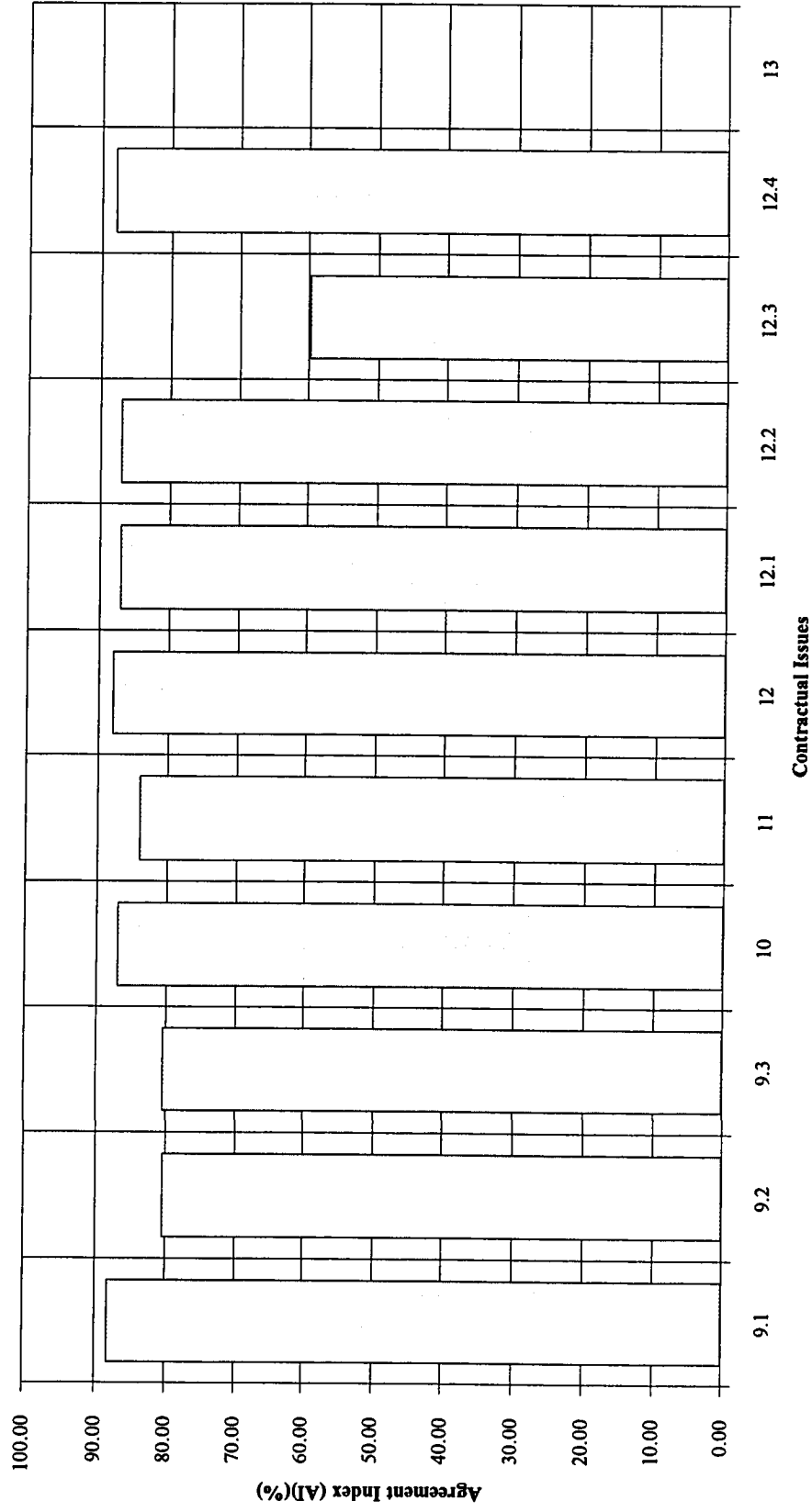


FIGURE 6.3 THIRD DOCUMENT: SPECIFIC CONDITIONS AND SCOPE OF WORKS



Fourth Document: Bill of Quantities:

The fourth document consists of twelve contractual issues related to the Bill of Quantities. These consist mostly of a number of schedules of items of work to be performed, with quantities entered against each item. The contract quantities usually being proposed in accordance with specified standard methods of measurements of building works. A Bill of Quantities, sets out in a systematic method, the basic quantities and a full description of all items of labour, materials and equipments required to perform the work.

The fourth document is considered to be of primary importance to the public building maintenance contract because it gives a brief description of the work and the types of contract to be used. It also provides to contractor with details of the work which will be grouped into the appropriate section.

The results obtained from the addressed questionnaire of the fourth document indicated that forty-six (46) and forty-four (44) of the respondents have ticked "strong agree" and "agree" choices respectively, whereas, no respondents have selected the "disagree" and "strongly disagree" choices. The mean value was equal to (3.51) and the agreement index (AI) reached eighty-eight percent (88%) for the highest contractual issue in the fourth document which is the contractual issue No. Three. The third contractual issue fell into "strongly agree" range. Furthermore, the survey indicated that thirty-two (32) and forty-six (46) respondents have selected "strongly agree" and "agree" choices respectively whereas, no respondents ticked the "disagree" and "strongly disagree" choices. The mean value was equal to (3.22) and the agreement index (AI) reached eighty-one (81) as the lowest contractual issue in their document which is contractual issue No. Two. The second contractual issue fell into "strongly agree" range (Table 6.20) (Figure 6.4).

A detailed analysis of the results gathered for this document, demonstrated that most of the respondents (88 out of 90) supported the list of proposed contractual issue to be included in this document as a major part of the standardized public building maintenance contract. The following is a sampling of many points that were made by the respondents which emphasize the importance of this document and also the reason for such high support by the respondents:

- This document provides the client with a uniformed basis for competitive tender and also facilitates the contractor progress payment procedure.

- It provides a schedule of prices for valuing variation orders during the course of the contract and to minimize any expected controversy or disputes between the contracted parties.
- It allows the client to obtain additional manpower, during the contract period, without major changes in the contract.
- It facilitates the clients method of payment to the contractor, based on the actual amount of work that has been performed at the site.
- It helps the client to know, in advance, the different spare parts needed at the site, during the contract period.
- It specifies clearly, the designated costs required to perform the janitorial work and to assist the client's representative to know precisely the number of personnel, materials and tools needed to perform the janitorial work.
- The fourth document indicates the difference in the cost between types of maintenance works needed at the site and to ensure that the contractor supplies the most qualified supervisors to inspect the existing systems and plants at the site.
- It ensures that the contractor shall be fully liable for the operation of the existing systems and plants.
- This document provides to the client, a significant saving, by amending the existing conditions of the site facilities within the permissible client allocated annual budget.
- It specifies the quantities and qualities of equipment and tools to be supplied by the contractor and to ensure that all of these items are registered with appropriate agencies of Saudi Arabia.
- It directs the contractor to the methods of payment applied by the client and the preparation methods of progress reports for the work completed during the preceding period.
- It states the rules and regulations relating to payments, imposed penalties and delay fines, that will be applied in the contract.
- This document ensures that the contractor, at any time, as directed by the client's representative, shall properly pack, identify and reload all the client's consumable materials, which are determined by the client's representative, to be reusable, and shall transport such items to any location designated by the client.

Table 6.20 Fourth Document: Bill of Quantities

Contractual Issues Number	Number of Respondents	Strongly Agree		Agree		Disagree		Strongly Disagree		Mean	Standard Deviation	Agreement Index
		Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent			
1	90	36	40.00	39	43.33	15	16.67	0	0.00	3.23	0.63	80.75
2	90	32	35.56	46	51.11	12	13.33	0	0.00	3.22	0.97	80.50
3	90	46	51.11	44	48.89	0	0.00	0	0.00	3.51	0.70	87.75
4	90	39	43.33	51	56.67	0	0.00	0	0.00	3.43	0.69	85.75
5	90	36	40.00	54	60.00	0	0.00	0	0.00	3.40	0.69	85.00
6	90	32	35.56	58	64.44	0	0.00	0	0.00	3.36	0.69	84.00
7	90	32	35.56	58	64.44	0	0.00	0	0.00	3.36	0.69	84.00
8	90	39	43.33	51	56.67	0	0.00	0	0.00	3.43	0.69	85.75
9	90	28	31.11	62	68.89	0	0.00	0	0.00	3.31	0.71	82.75
10	90	28	31.11	62	68.89	0	0.00	0	0.00	3.31	0.71	82.75
11	90	36	40.00	54	60.00	0	0.00	0	0.00	3.40	0.69	85.00
12	90	0	0.00	0	0.00	0	0.00	0	0.00	0.00	0.00	0.00
Total	990	384	426.67	579	643.3	27	30.00	0	0	36.96	7.86	924
Average Score	90	35	38.89	53	58.89	2	2.22	0	0.00	3.37	0.68	84.25

FIGURE 6.4 FOURTH DOCUMENT: BILL OF QUANTITIES

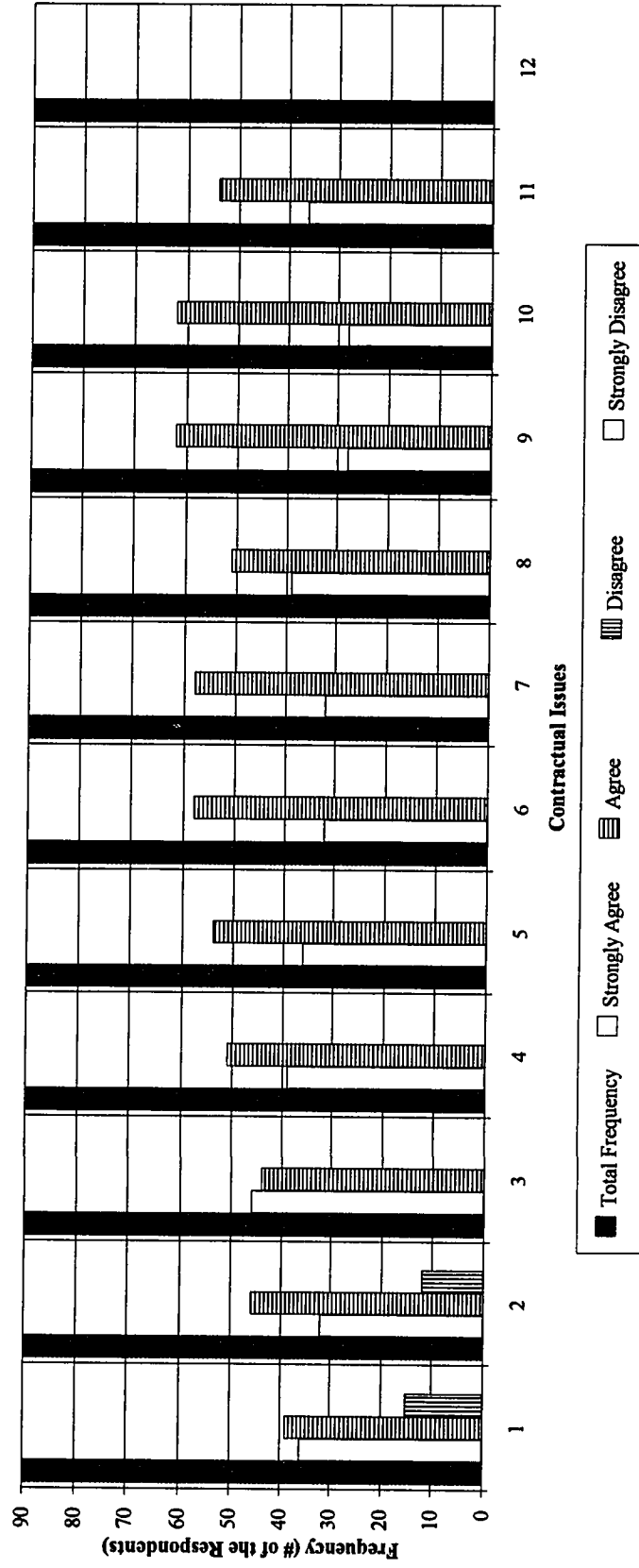
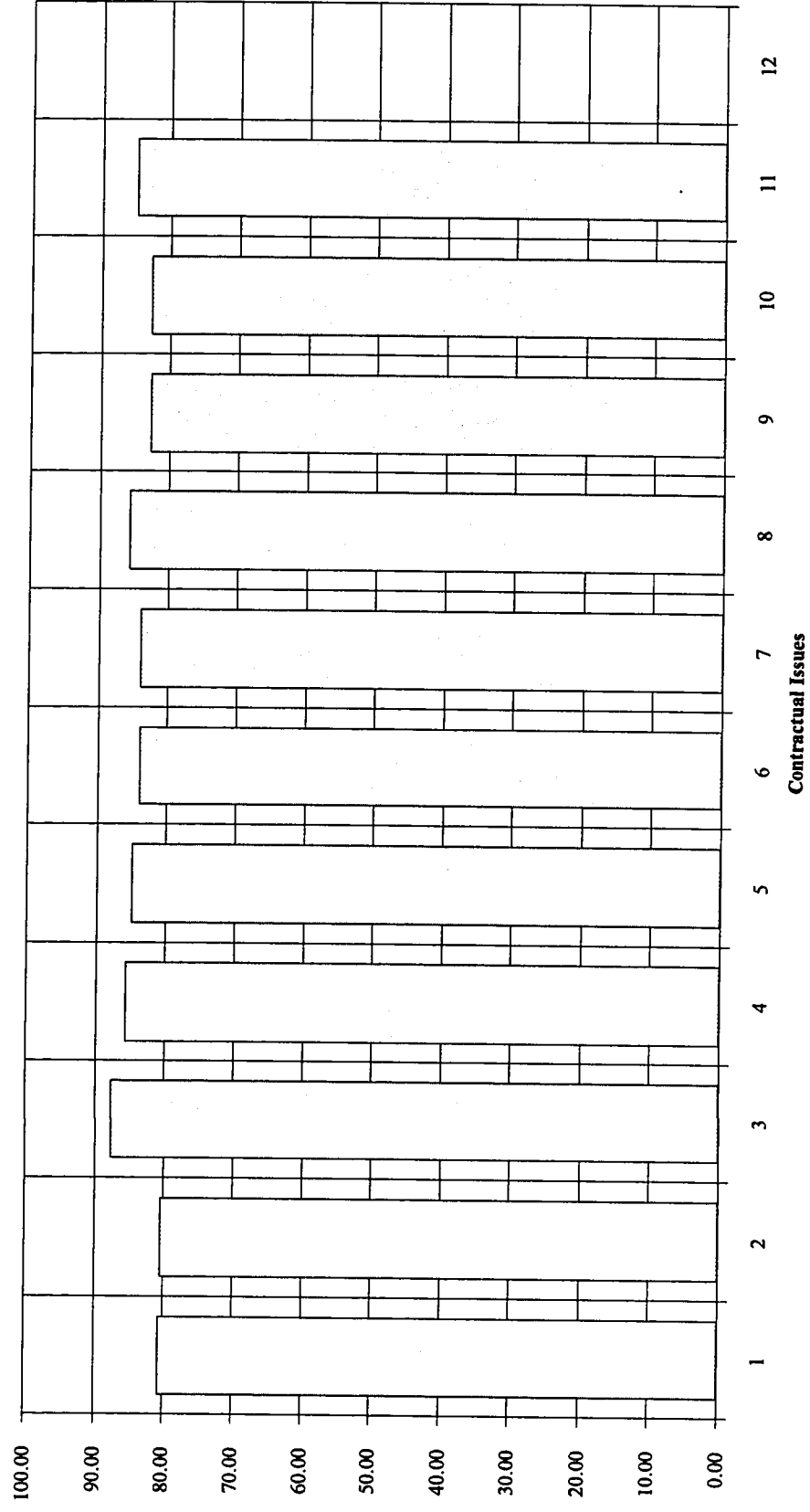


FIGURE 6.4 FOURTH DOCUMENT: BILL OF QUANTITIES



Fifth Document: Technical Specifications:

The fifth document consists of six contractual issues related to the specifications of the contract. The specifications describe what is to be furnished and how it is to be installed; the drawings designating where items should be placed. Specifications are made up of verbal descriptions of the quality of materials and equipments to be used on contract and their application or installation.

This document and its related issues is considered to be a major part of the proposed standardized maintenance contract because it is a basic guide to the contractor on exactly what is required of him at work sites and to provide him with the necessary technical data needed for the maintenance of buildings, systems and equipments.

The results obtained for the fifth document indicated that fifty-two (52) and forty (40) respondents have selected "strongly agree" and "agree" choices respectively whereas, no disagreement choices were selected. The mean value was equal to (3.57) and the agreement index (AI) reached eighty-nine percent (89%) which is considered to be the highest for the contractual issues of this document and it is for the first contractual issue. The first contractual issue fell into "strongly agree" range. Furthermore, the survey indicated that nineteen (19) and sixty-two (62) respondents have "strongly agree" and "agree" choices respectively whereas, only eleven respondents have disagreed. The mean value was equal to (3.09) and the agreement index (AI) reached seventy-seven (77) as the lowest in this documents and it is for fifth contractual issue. The fifth contractual issue fell into "strongly agree" range (Table 6.21) (Figure 6.5).

A detailed analysis of the results demonstrated that the majority of the respondents (87 out of 92) supported the list of contractual issues related to the fifth document of the proposed Standardized Public Building Maintenance Contract. The following is a sampling of many points that were made by the respondents which reflect the reasons for such support for this document:

- This document provides a vital role in the maintenance contract by describing, in detail, the work to be executed under the contract and the nature and quality of workmanship.
- It ensure that the contractor is fully familiar with the systems and equipment manufacturers and dealers to be used in case of system repairs or spare part requisitions.

- The fifth document provides a historical base for the client and the contractor which is considered very helpful for the standardization of input information as well as being time saving.
- It ensures that the contractor analyzes the steps and procedures used to develop the existing communication system used by the client which will enable him to specify the advantages and disadvantages associated with the system and thus develop an effective communication system.
- It provides the contractor with all other needed documents to facilitate his work at the site and to develop a standardized working format which will be needed during the period of the contract, such as change order formats.
- It ensures that all types of proclamations between the contracted parties are received, with a reasonable period of time to respond to the clients requests.

Table 6.21 Fifth Document: Technical Specifications

Contractual Issues Number	Number of Respondents	Strongly Agree		Agree		Disagree		Strongly Disagree		Mean	Standard Deviation	Agreement Index
		Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent			
1	92	52	56.52	40	43.48	0	0.00	0	0.00	3.57	0.72	89.00
2	92	34	36.96	42	45.65	16	17.39	0	0.00	3.19	0.62	79.75
3	92	27	29.35	65	70.65	0	11.96	0	0.00	3.29	0.72	82.25
4	92	30	32.61	62	67.39	0	0.00	0	0.00	3.33	0.73	83.25
5	92	19	20.65	62	67.39	11	11.96	0	0.00	3.09	0.69	77.25
6	92	19	20.65	73	79.35	0	0.00	0	0.00	3.21	0.77	80.25
7	92	0	0.00	0	0.00	0	0.00	0	0.00	0.00	0.00	0.00
Total	552	181	196.74	344	373.9	27	41.31	0	0	19.68	4.25	491.75
Average Score	92	30	32.61	57	61.96	5	5.43	0	0.00	3.27	0.68	81.75

FIGURE 6.5 FIFTH DOCUMENT: TECHNICAL SPECIFICATIONS

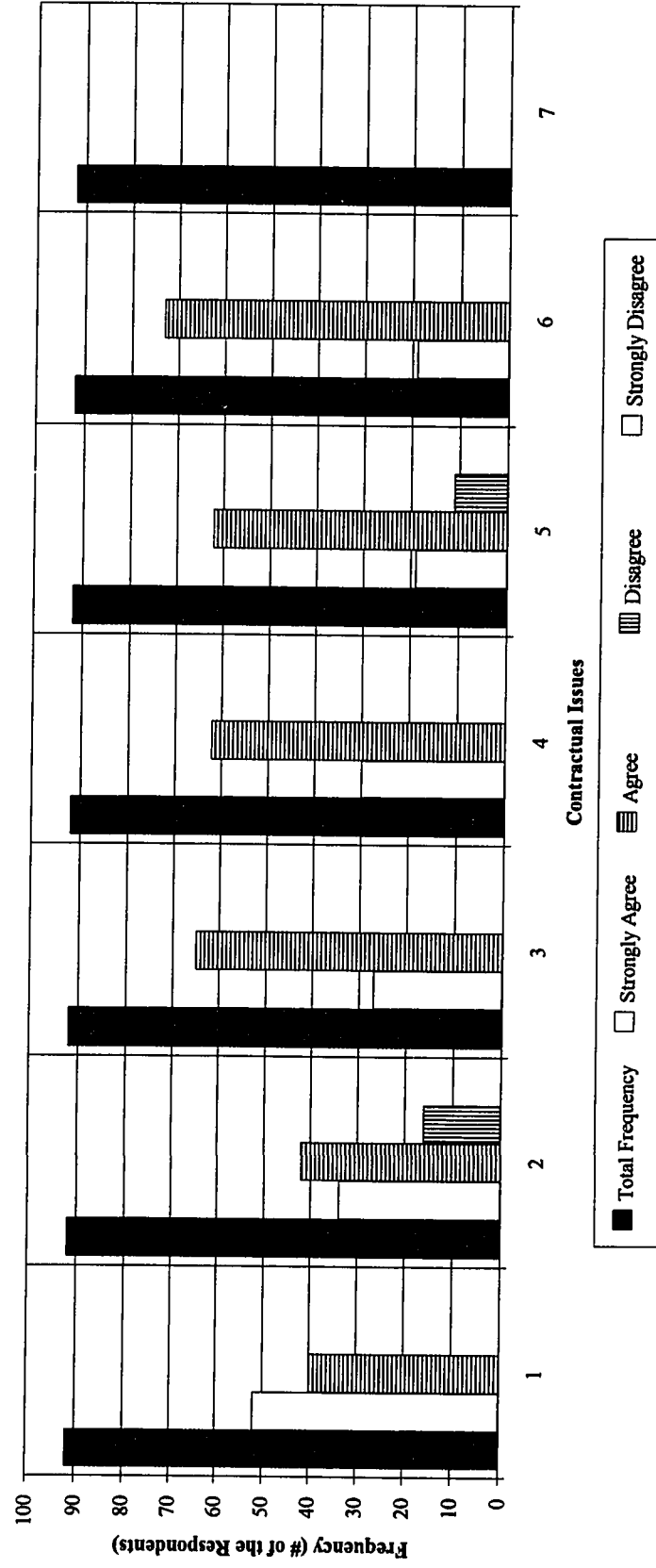
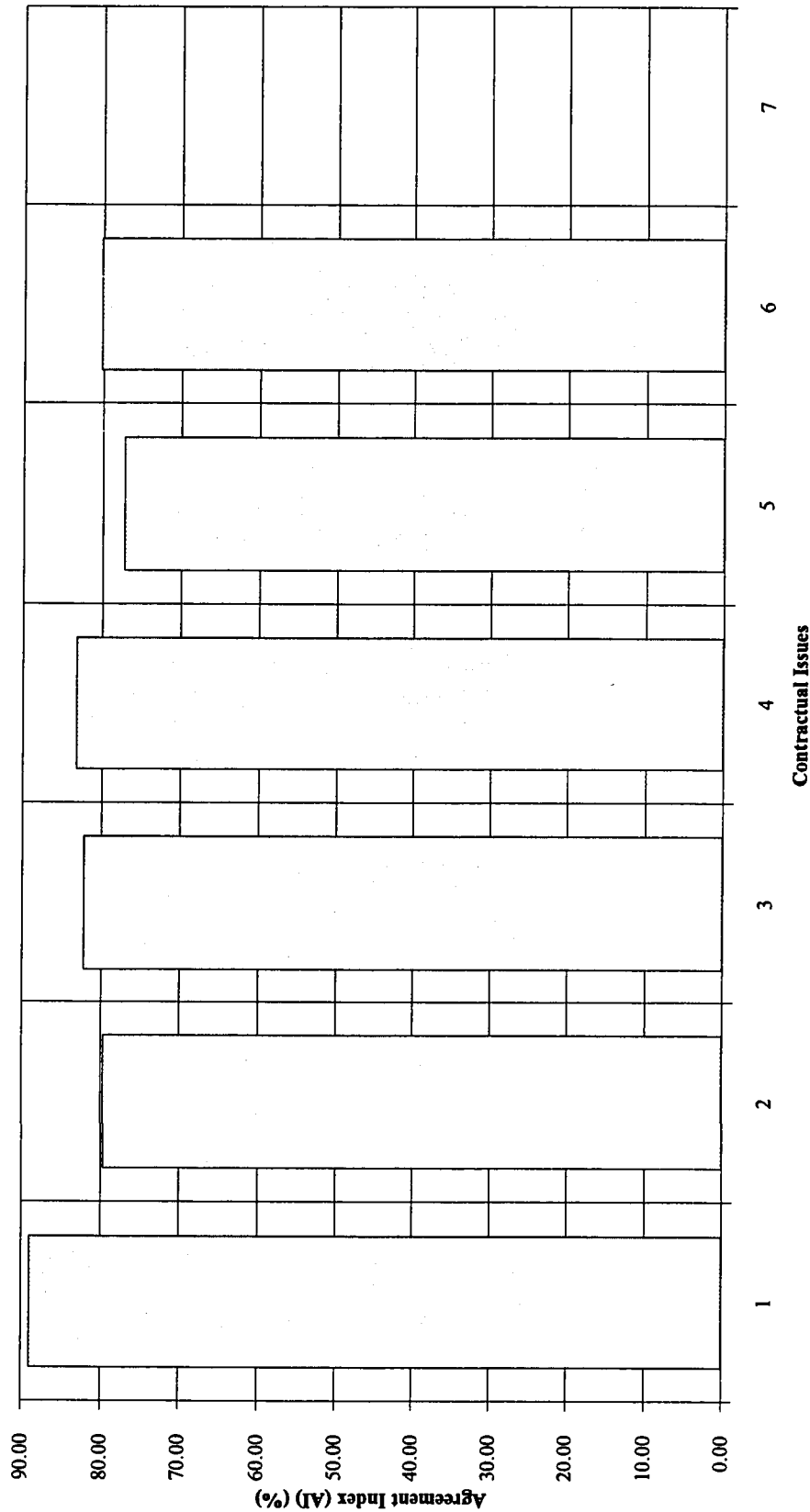


FIGURE 6.5 FIFTH DOCUMENT: TECHNICAL SPECIFICATIONS



Sixth Document: Basic Charter (Agreement Form):

This document constitutes the basic agreement form between the contractor and the client for execution of the maintenance work and in accordance with the other contract documents. The document identifies the contracted parties, the date of the contract, the contract costs, contract basic works, and finally, the signatures of the contracted parties.

There is no doubt that this document is considered to be of primary importance due to the fact that it provides brief information about the maintenance contract and presents to top management of both parties, the official obligations and responsibilities stated in the agreed maintenance contract.

The information gathered from the results of this document indicated that sixty (60) and thirty (30) respondents have selected "strongly agree" and "agree" choices respectively whereas, no disagreement choices were selected. The mean value was equal to (3.67) and the agreement index (AI) reached ninety-two percent (92%) as the highest contractual issue of this documents and it is for the Ninth contractual issue. The ninth contractual issue fell into the "strongly agree" range.

Furthermore, the survey indicated that twenty (20) and seventy (70) of the respondents ticked "strongly agree" and "agree" choices respectively whereas, the disagreement side was void of selections. The mean value was equal to (3.22) and the agreement index (AI) reached eighty-one (81) as the lowest contractual issue in this document and it is for the Seventh contractual issue. The Seventh contractual issue fell into "strongly agree" range (Table 6.22) (Figure 6.6).

The results of this document revealed that all of the respondents (90 out of 90) supported the inclusion of this document and its related contractual issues in the proposed Standardized Public Maintenance Contract. The following is a sampling of many points that were made by the respondents which clearly justify the higher support to the sixth document:

- This document, presents to both parties, a summary of the contract, major issues and the required work to be accomplished by the selected contractor.
- It ensures that the contractors covenants to complete and maintain the work in accordance with the contract, and the clients covenants is to pay the contractor at the times, and in the manner prescribed by the contract.

- It refers to the related Ministers of Council rules and regulations for the prohibition of contract, partial or full assignments, to another contractor without the clients approval.

Table 6.22 Sixth Document: Basic Contract Charter (Agreement Form)

Contractual Issues Number	Number of Respondents	Strongly Agree		Agree		Disagree		Strongly Disagree		Mean	Standard Deviation	Agreement Index
		Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent			
1	90	54	60.00	36	40.00	0	0.00	0	0.00	3.60	0.73	90.00
2	90	47	52.22	43	47.78	0	0.00	0	0.00	3.52	0.70	88.00
3	90	36	40.00	54	60.00	0	0.00	0	0.00	3.40	0.69	85.00
4	90	40	44.44	50	55.56	0	0.00	0	0.00	3.44	0.69	86.00
5	90	32	35.56	58	64.44	0	0.00	0	0.00	3.36	0.69	84.00
6	90	29	32.22	61	67.78	0	0.00	0	0.00	3.32	0.71	83.00
7	90	20	22.22	70	77.78	0	0.00	0	0.00	3.22	0.76	80.50
8	90	47	52.22	43	47.78	0	0.00	0	0.00	3.52	0.70	88.00
9	90	60	66.67	30	33.33	0	0.00	0	0.00	3.67	0.76	91.75
10	90	0	0.00	0	0.00	0	0.00	0	0.00	0.00	0.00	0.00
Total	810	365	405.55	445	494.45	0	0	0	0.00	31.05	6.43	776.25
Average Score	90	41	45.56	49	54.44	0	0.00	0	0.00	3.46	0.69	86.50

FIGURE 6.6 SIXTH DOCUMENT: BASIC CONTRACT CHARTER (AGREEMENT FORM)

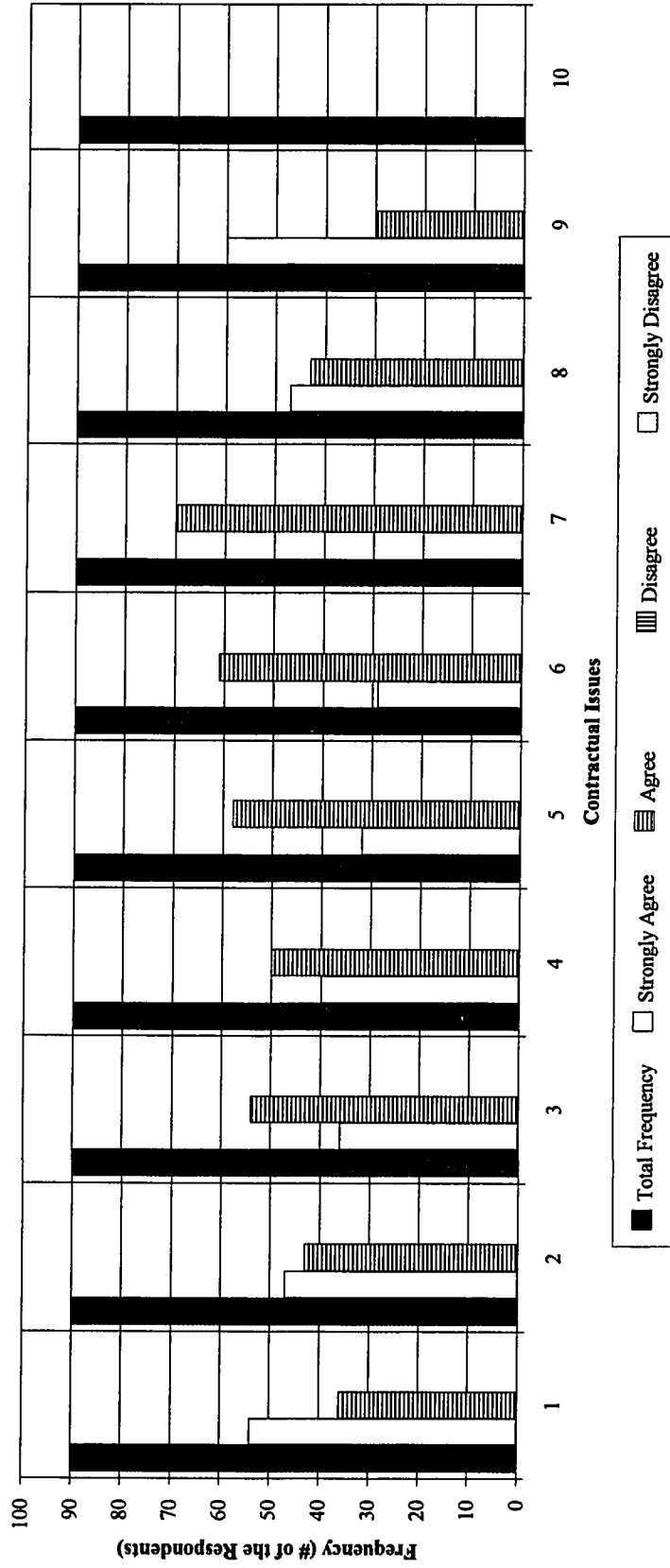
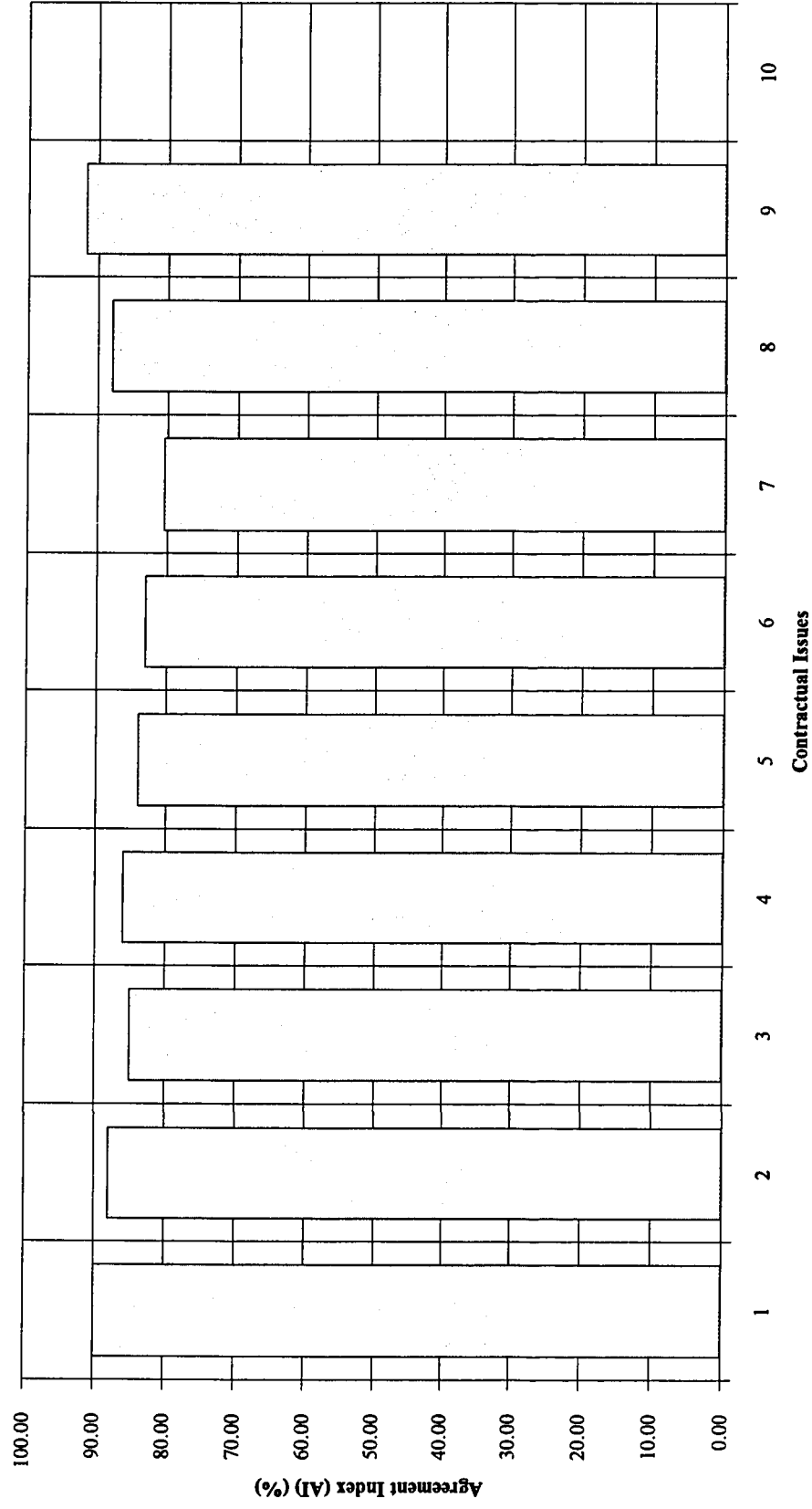


FIGURE 6.6 SIXTH DOCUMENT: BASIC CONTRACT CHARTER (AGREEMENT FORM)



6.3 Existing Maintenance Contracts Versus Proposed Maintenance Contract:

The presented results in this chapter will be correlated with the previous results discussed in Chapter Three, which is for the existing Building Maintenance Contract used by the local governmental authorities in Saudi Arabia. For the purpose of simplification, the agreement index of the existing Building Maintenance Contract documents (contractual issues) will be obtained by adding the agreement index of both fully covered and partially covered. Then the sum of both agreement indexes will be correlated with the agreement index of the proposed standardized building maintenance contract presented in the third part of the questionnaire. The purpose of such analysis is to provide a numerical value which represents the strength of the relation between the agreement index of the existing and proposed building maintenance contracts. Statistical analysis system progress (SAS) was used to test the type of relationship that exists between the two scores. The outcome of the program analysis, indicated very clearly, there is a linear-relationship exists between the proposed maintenance contract and the existing maintenance contract (Table 6.23) (Figure 6.7). Other models of data correlation, such as logarithmic, and reciprocal, were tested and ignored due to the higher value of standard error. The linear equation that best represents the relationship of the proposed contract as a function of the existing contract can be shown as follows:

$$\begin{array}{lcl} \text{Proposed Maintenance Contract} & = & 1.333862 \times \text{Existing Maintenance} \\ \text{(PMC)} & & \text{Contract (EMC)} \end{array}$$

$$\text{Standard Error} = 0.06234465$$

Therefore one can conclude that there is a high correlation between proposed and existing maintenance contracts.

Table 6:23: The Correlation of the Agreement Index of The Proposed and The Existing Maintenance Contract Documents

First Document: General Instruction to Bidders

Contractual Issues Number	Agreement Index		Predicted Proposed Contract (PPC)	Error of Proposed and Existing Contract (EPEC)
	Proposed Maintenance Contract (PMC)	Existing Maintenance Contract (EMC)		
1	90.50	72.50	96.71	19.89
2	86.50	50.00	66.69	42.19
3	78.25	37.50	50.02	52.15
4	84.75	57.50	76.69	32.15
5	86.00	62.50	83.37	27.32
6	83.50	30.00	40.02	64.07
7	82.25	12.50	16.67	84.80
8	88.25	27.50	36.68	68.84
9	87.75	62.50	83.37	28.77
10	85.00	45.00	60.02	10.00
11	72.75	35.00	46.69	51.89
12	80.25	32.50	43.35	59.50
13	91.75	70.00	93.37	23.71
14	77.00	30.00	40.02	61.04
15	87.25	37.50	50.02	57.02
16	90.75	65.00	86.70	28.37
17	87.25	70.00	93.37	19.77
18	0.00	0.00	0.00	0.00

Second Document: General Conditions

Contractual Issues Number	Agreement Index		Predicted Proposed Contract (PPC)	Error of Proposed and Existing Contract (EPEC)
	Proposed Maintenance Contract (PMC)	Existing Maintenance Contract (EMC)		
1	91.25	45.00	60.09	50.63
2	78.25	30.00	40.02	61.66
3	82.00	27.50	36.68	66.46
4	82.00	82.50	110.04	-0.61
5	91.00	80.00	106.71	12.09
6	83.75	85.00	113.38	-1.49
7	88.25	95.00	126.72	-7.65
8	84.00	25.00	33.35	70.24
9	91.25	62.50	83.37	31.51
10	85.50	27.50	36.68	67.95
11	90.00	45.00	60.02	50.00
12	92.75	12.50	16.67	86.52
13	80.50	10.00	13.34	87.58
14	86.50	55.00	73.36	36.42
15	93.25	45.00	60.02	51.74
16	88.25	12.50	16.67	85.84
17	80.50	47.50	63.36	40.99
18	87.50	7.50	10.00	91.43
19	75.50	57.50	76.69	23.84
20	88.25	77.50	103.37	12.18
21	79.75	5.00	6.67	93.73
22	82.25	25.00	33.35	69.60
23	77.75	42.50	56.69	45.34
24	74.00	77.50	103.37	-4.73
25	82.00	10.00	13.34	87.80

Contractual Issues Number	Agreement Index		Predicted Proposed Contract (PPC)	Error of Proposed and Existing Contract (EPEC)
	Proposed Maintenance Contract (PMC)	Existing Maintenance Contract (EMC)		
26	86.75	52.50	70.03	39.48
27	85.75	97.50	130.05	-13.70
28	89.75	97.50	130.05	-8.64
29	74.00	72.50	96.71	2.03
30	78.50	62.50	83.37	20.38
31	89.50	72.50	96.71	18.99
32	89.00	57.50	76.69	35.39
33	86.25	65.00	86.70	24.64
34	76.50	32.50	43.35	57.52
35	92.25	42.50	56.69	53.93
36	68.50	42.50	56.69	37.96
37	77.75	25.00	33.35	67.85
38	84.75	22.50	30.01	73.45
39	92.25	30.00	40.02	67.48
40	83.00	77.50	103.37	6.63
41	84.50	17.50	23.34	79.29
42	75.00	17.50	23.34	76.67
43	83.25	70.00	93.37	15.92
44	81.50	17.50	23.34	78.53
45	84.75	60.00	80.03	29.20
46	80.75	77.50	103.37	4.02
47	75.50	77.50	100.71	0.00
48	82.50	40.00	53.35	51.52
49	84.50	37.50	50.02	55.62
50	83.50	22.50	30.01	73.05
51	83.00	7.50	10.00	90.96
52	83.00	10.00	13.34	87.95
53	80.75	12.50	16.67	84.52
54	82.00	12.50	16.67	84.75
55	80.75	27.50	36.68	65.94
56	0.00	0.00	0.00	0.00

Third Document: Specific Conditions and Scope of Works

Contractual Issues Number	Agreement Index		Predicted Proposed Contract (PPC)	Error of Proposed and Existing Contract (EPEC)
	Proposed Maintenance Contract (PMC)	Existing Maintenance Contract (EMC)		
1	84.25	22.50	30.01	73.29
1.1	89.00	47.50	63.36	46.63
1.2	89.50	12.50	16.67	86.03
1.3	82.25	70.00	93.37	14.89
1.4	82.25	12.50	16.67	84.80
1.5	82.00	25.00	33.35	69.51
1.6	85.50	15.00	20.01	82.46
1.7	85.50	17.50	23.34	79.53
1.8	76.75	5.00	6.67	93.49
2	84.50	85.00	113.38	-0.59
2.1	89.50	67.50	90.04	24.58
2.2	90.50	72.50	96.71	19.89
2.3	77.00	72.50	96.71	5.84
2.4	82.25	65.00	86.70	20.97
2.5	83.25	62.50	83.37	24.92
3	85.25	52.50	70.03	38.42
3.1	80.50	32.50	43.35	59.63
3.2	87.50	85.00	113.38	2.86
3.3	87.50	7.50	10.00	91.43

Contractual Issues Number	Agreement Index		Predicted Proposed Contract (PPC)	Error of Proposed and Existing Contract (EPEC)
	Proposed Maintenance Contract (PMC)	Existing Maintenance Contract (EMC)		
4	77.75	57.50	76.69	26.05
4.1	74.00	10.00	13.34	86.49
4.2	84.50	12.50	16.67	85.21
4.3	80.00	12.50	16.67	84.38
4.4	72.75	20.00	26.68	72.51
5	84.00	25.00	33.35	70.24
5.1	83.75	60.00	80.03	28.36
5.2	83.75	50.00	66.69	40.29
5.3	84.75	32.50	43.35	61.65
6	87.25	35.00	46.69	59.89
7	84.75	90.00	120.05	-6.19
7.1	83.50	50.00	66.69	40.12
7.2	83.50	52.50	70.03	37.13
7.3	83.00	52.50	70.03	36.75
7.4	86.50	40.00	53.35	53.76
7.5	83.25	75.00	100.04	9.99
7.6	83.25	65.00	86.70	21.92
7.7	83.50	45.00	60.02	46.11
7.8	85.00	52.50	70.03	38.24
7.9	82.00	45.00	60.02	45.12
7.10	85.00	62.50	83.37	26.47
7.11	85.00	50.00	66.69	41.18
7.12	80.75	45.00	60.02	44.27
8	81.50	50.00	66.69	38.65
9	83.25	87.50	116.71	-5.11
9.1	88.25	75.00	100.04	15.01
9.2	80.50	72.50	96.71	9.94
9.3	80.50	57.50	76.69	28.57
10	87.00	17.50	23.34	79.89
11	84.00	75.00	100.04	10.71
12	88.00	7.50	10.00	91.48
12.1	87.00	7.50	10.00	91.38
12.2	87.00	12.50	16.67	85.63
12.3	59.75	10.00	13.34	82.68
12.4	88.00	10.00	13.34	88.09
13	0.00	0.00	0.00	0.00

Fourth Document: Bill of Quantities

Contractual Issues Number	Agreement Index		Predicted Proposed Contract (PPC)	Error of Proposed and Existing Contract (EPEC)
	Proposed Maintenance Contract (PMC)	Existing Maintenance Contract (EMC)		
1	80.75	32.50	43.35	59.75
2	80.50	95.00	126.72	-18.01
3	87.75	60.00	80.03	31.62
4	85.75	65.00	86.70	24.19
5	85.00	47.50	63.36	44.12
6	84.00	37.50	50.02	55.36
7	84.00	30.00	40.02	64.29
8	85.75	37.50	50.02	56.27
9	82.75	70.00	93.37	15.41
10	82.75	92.50	123.38	-11.78
11	85.00	80.00	106.71	5.88
12	0.00	0.00	0.00	0.00

Fifth Document: Technical Specifications

Contractual Issues Number	Agreement Index		Predicted Proposed Contract (PPC)	Error of Proposed and Existing Contract (EPEC)
	Proposed Maintenance Contract (PMC)	Existing Maintenance Contract (EMC)		
1	89.00	15.00	20.01	83.15
2	79.75	10.00	13.34	87.46
3	82.25	10.00	13.34	87.84
4	83.25	0.00	*	100.00
5	77.25	2.50	3.34	96.76
6	80.25	2.50	3.34	96.88
7	0.00	0.00	0.00	0.00

Sixth Document: Basic Contractor Charter (Agreement Form)

Contractual Issues Number	Agreement Index		Predicted Proposed Contract (PPC)	Error of Proposed and Existing Contract (EPEC)
	Proposed Maintenance Contract (PMC)	Existing Maintenance Contract (EMC)		
1	90.00	95.00	126.72	-5.56
2	88.00	100.00	133.39	-13.64
3	85.00	100.00	133.39	-17.65
4	86.00	100.00	133.39	-16.28
5	84.00	82.50	110.04	1.79
6	83.00	95.00	126.72	-14.46
7	80.50	52.50	70.03	34.78
8	88.00	85.00	113.38	3.41
9	91.75	100.00	133.39	-8.99
10	0.00	0.00	0.00	0.00

* Zeroes value ignored from data to facilitate calculation of error in correlation processes (division by zero not defined by program in calculation)

The following table 6.24 shows the individual values related to the model variables.

Table 6.24 : Model Variables

Model Variables	Mean	Standard Deviation
Proposed Maintenance Contract (PMC)	83.4738411	5.7034342
Existing Maintenance Contract (EMC)	46.9738411	27.6026205
Relative Error (ER)	25.1782576	43.3519697
Absolute Error (EA)	41.7022676	27.6928014

FIGURE 6.7: THE AGREEMENT INDEX OF THE PROPOSED AND EXISTING MAINTENANCE CONTRACTS OF THE FIRST DOCUMENT

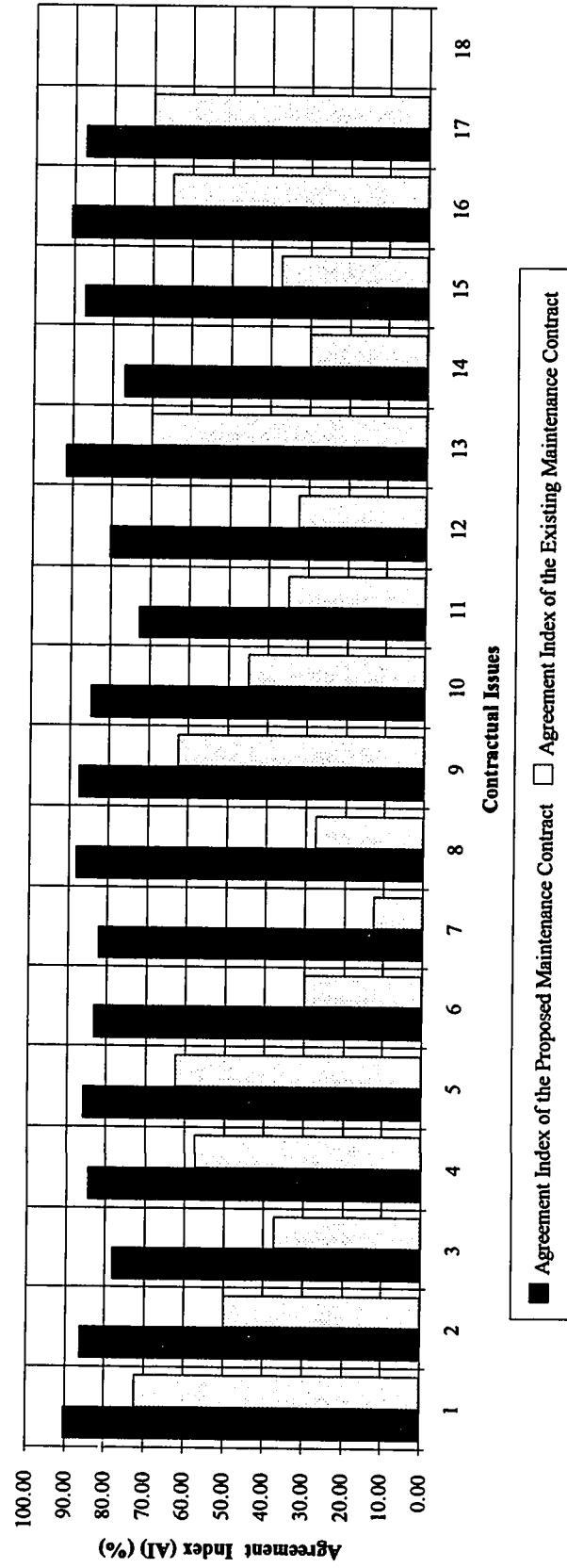
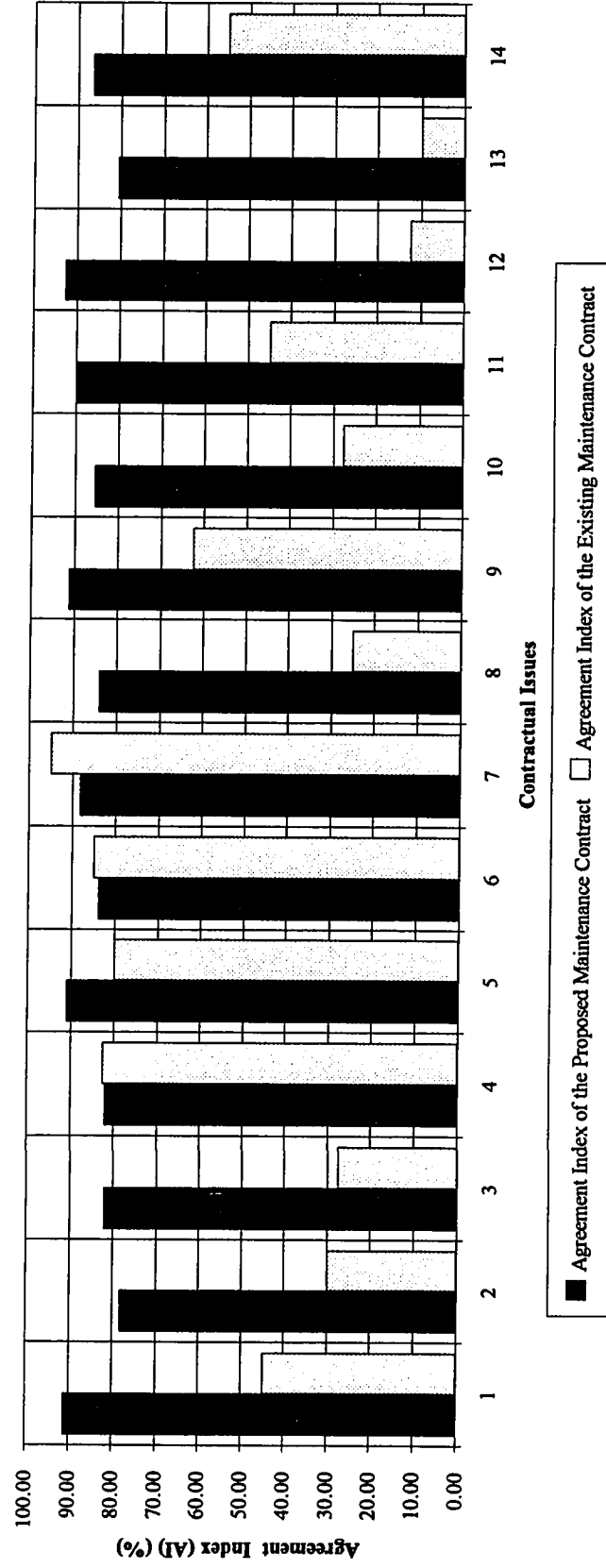


FIGURE 6.7: THE AGREEMENT INDEX OF THE PROPOSED AND EXISTING MAINTENANCE CONTRACTS OF THE SECOND DOCUMENT



**FIGURE 6.7: THE AGREEMENT INDEX OF THE PROPOSED AND EXISTING MAINTENANCE
CONTRACTS OF THE SECOND DOCUMENT**

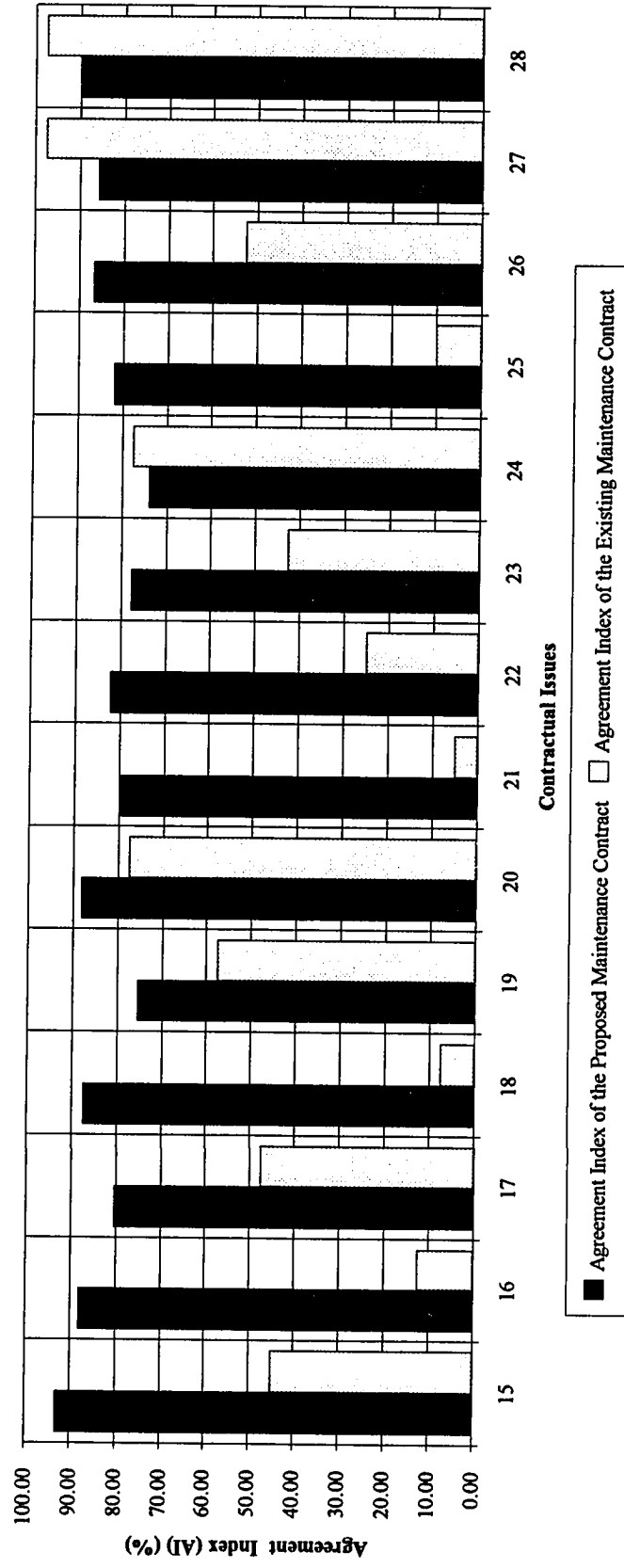


FIGURE 6.7: THE AGREEMENT INDEX OF THE PROPOSED AND EXISTING MAINTENANCE CONTRACTS OF THE SECOND DOCUMENT

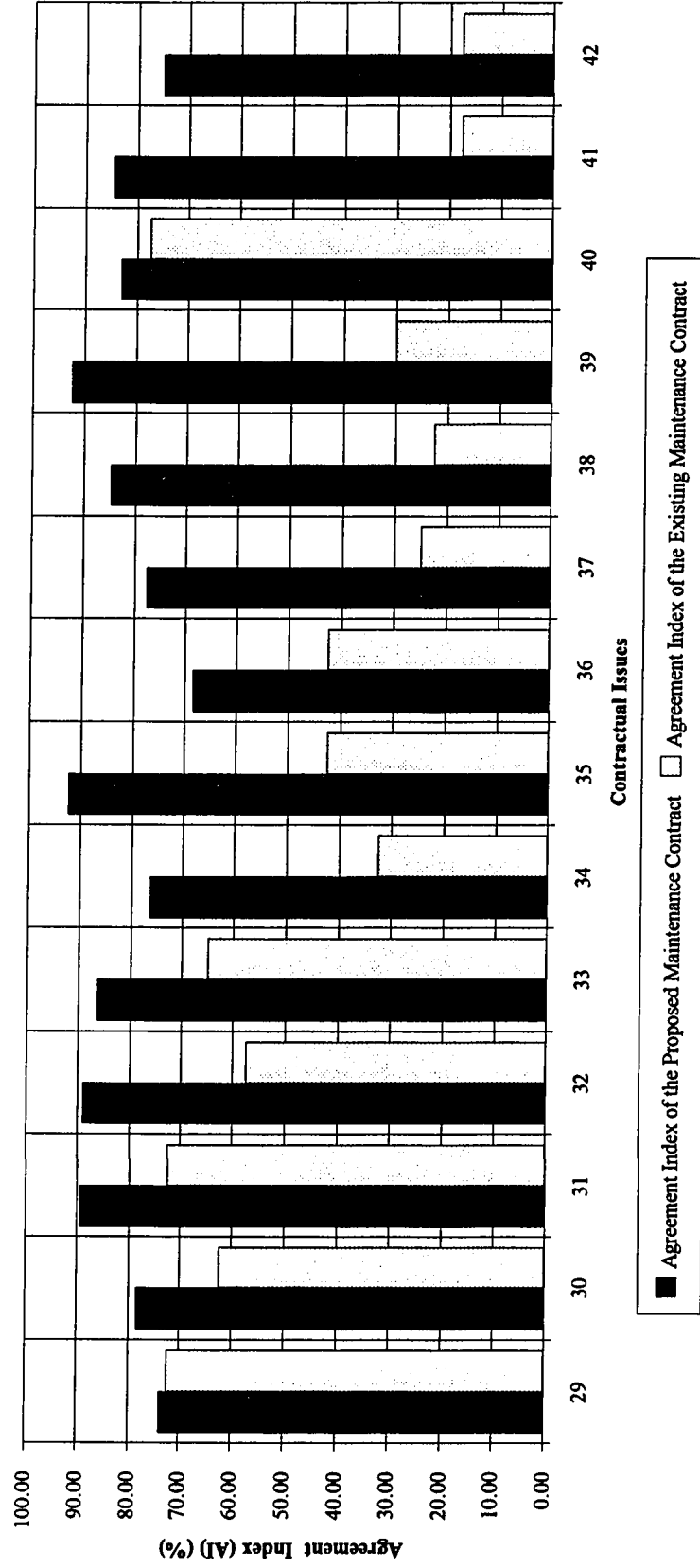


FIGURE 6.7: THE AGREEMENT INDEX OF THE PROPOSED AND EXISTING MAINTENANCE CONTRACTS OF THE SECOND DOCUMENT

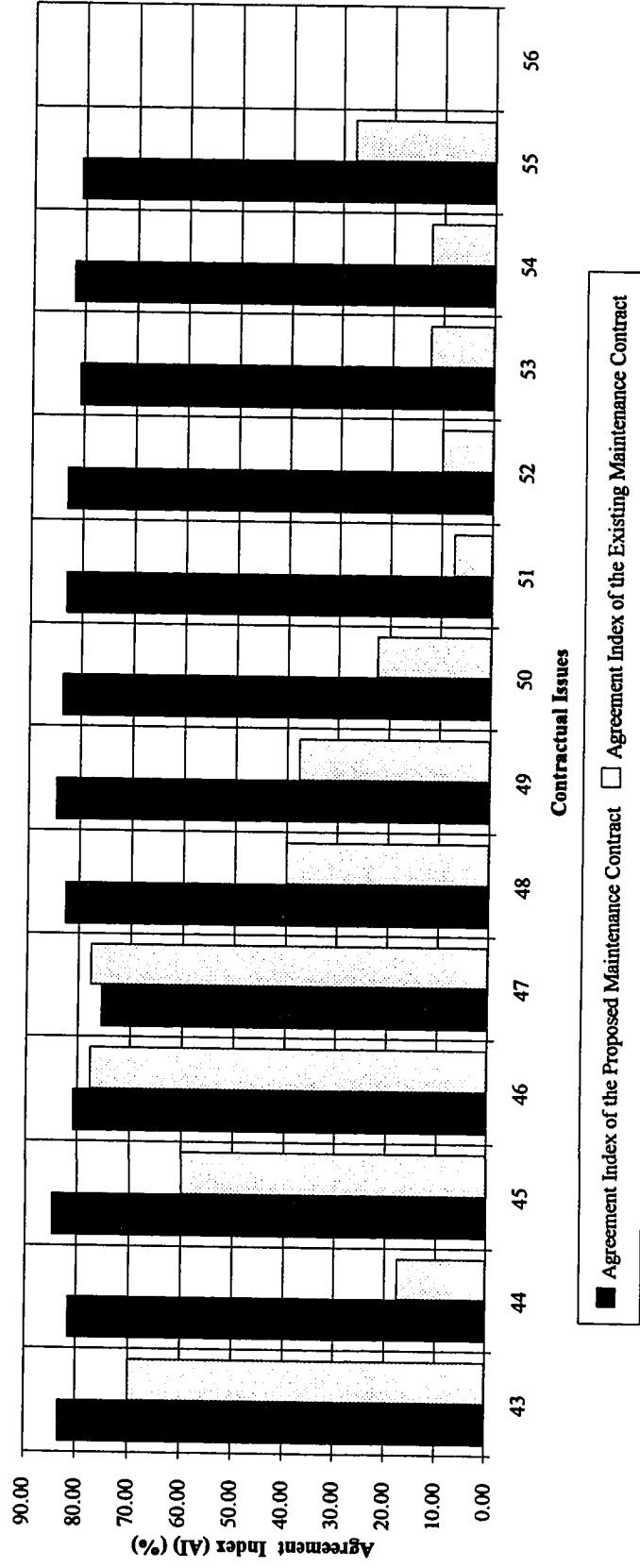


FIGURE 6.7: THE AGREEMENT INDEX OF THE PROPOSED AND EXISTING MAINTENANCE CONTRACTS OF THE THIRD DOCUMENT

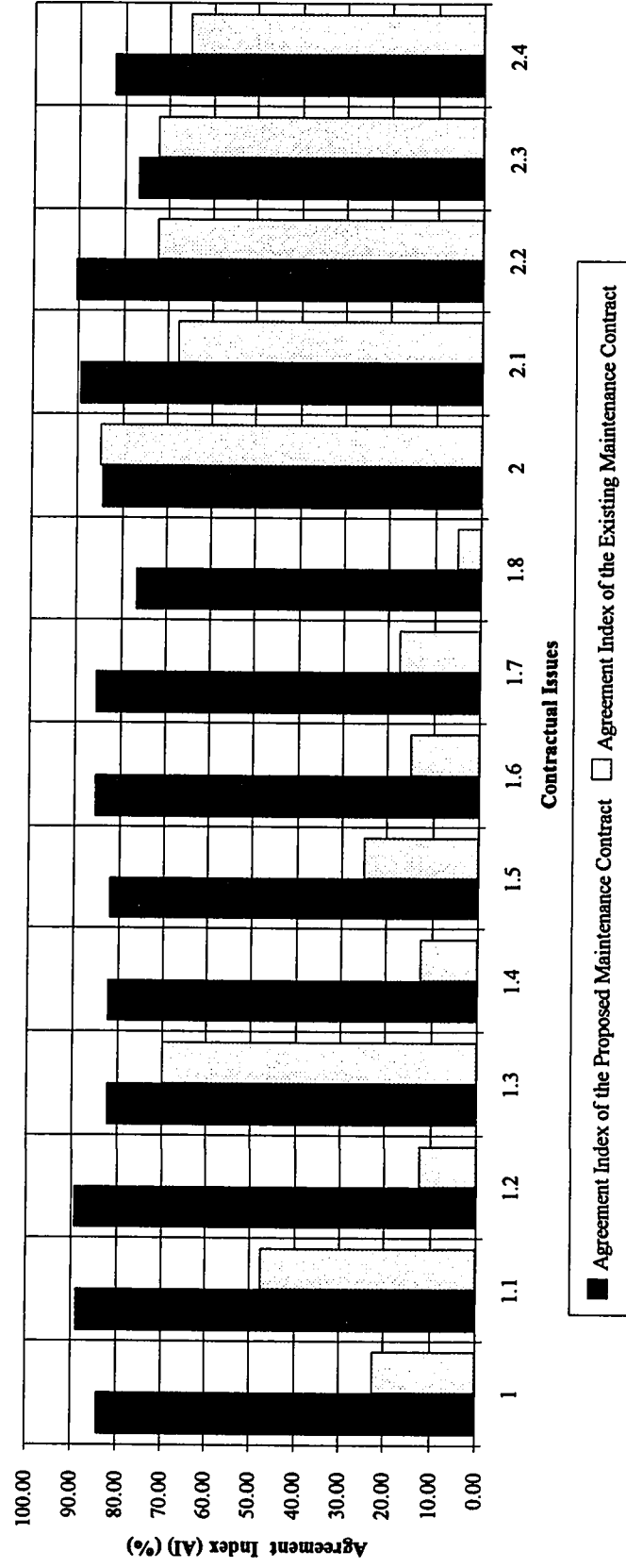


FIGURE 6.7: THE AGREEMENT INDEX OF THE PROPOSED AND EXISTING MAINTENANCE CONTRACTS OF THE THIRD DOCUMENT

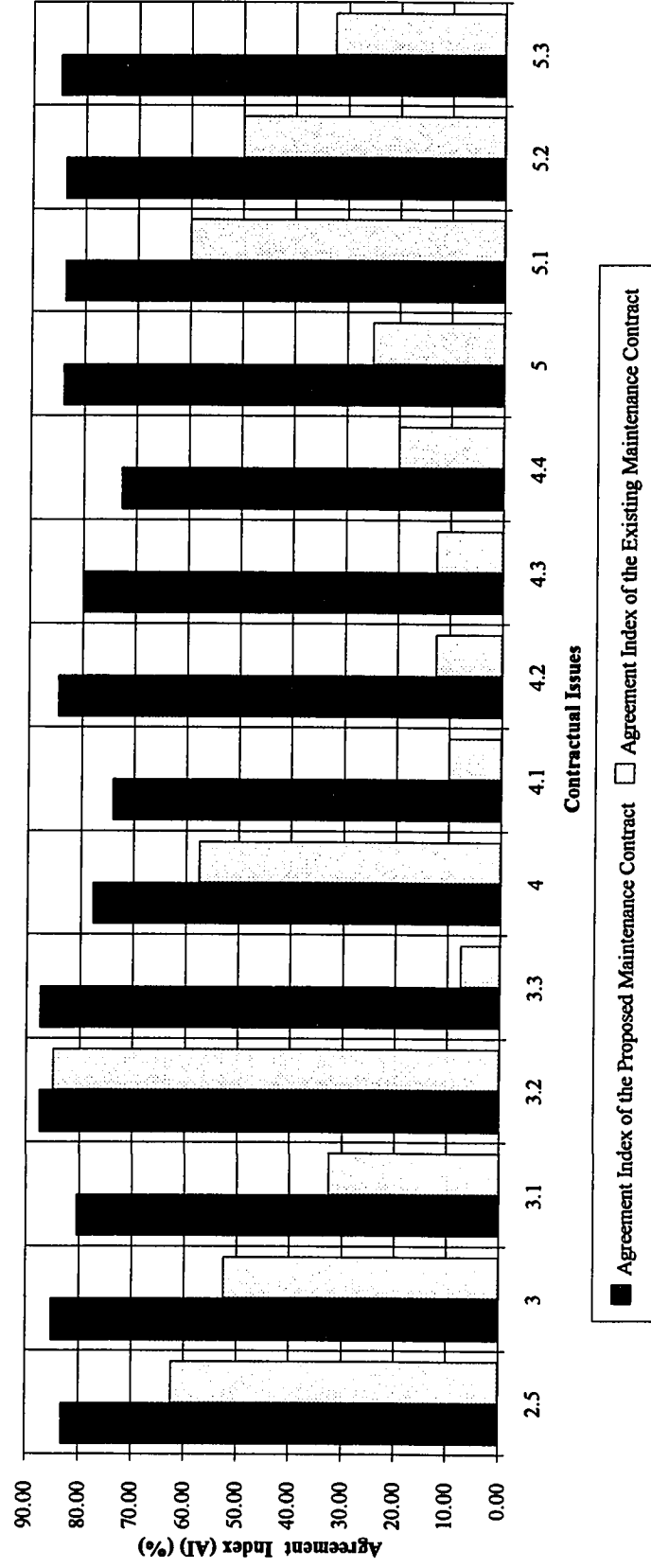


FIGURE 6.7: THE AGREEMENT INDEX OF THE PROPOSED AND EXISTING MAINTENANCE CONTRACTS OF THE THIRD DOCUMENT

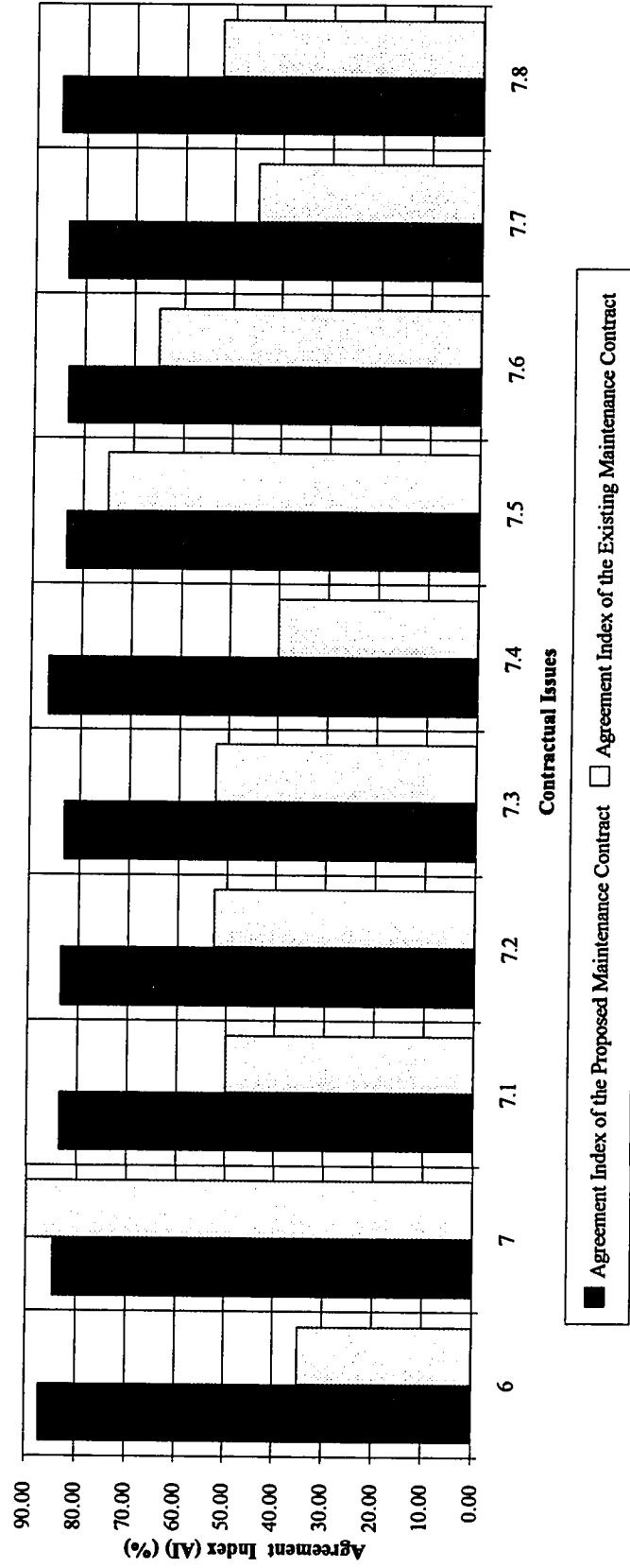


FIGURE 6.7: THE AGREEMENT INDEX OF THE PROPOSED AND EXISTING MAINTENANCE CONTRACTS OF THE THIRD DOCUMENT

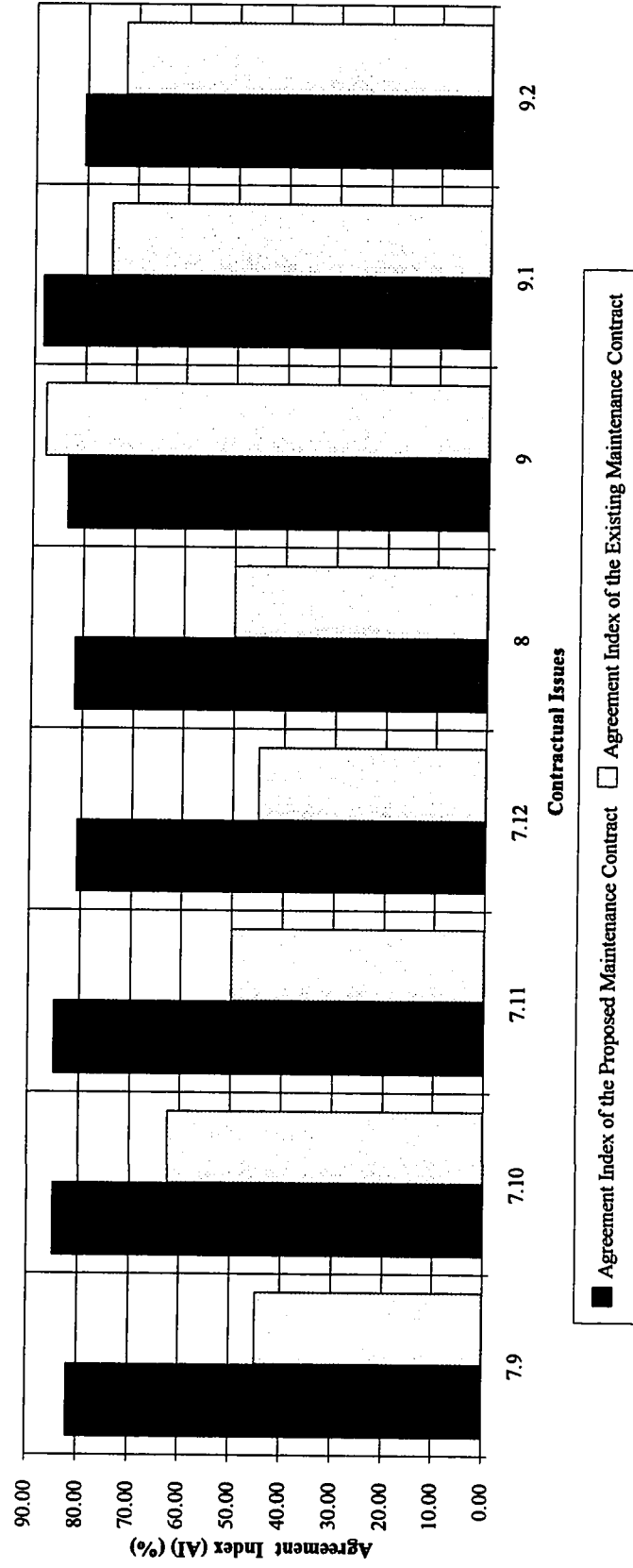


FIGURE 6.7: THE AGREEMENT INDEX OF THE PROPOSED AND EXISTING MAINTENANCE CONTRACTS OF THE THIRD DOCUMENT

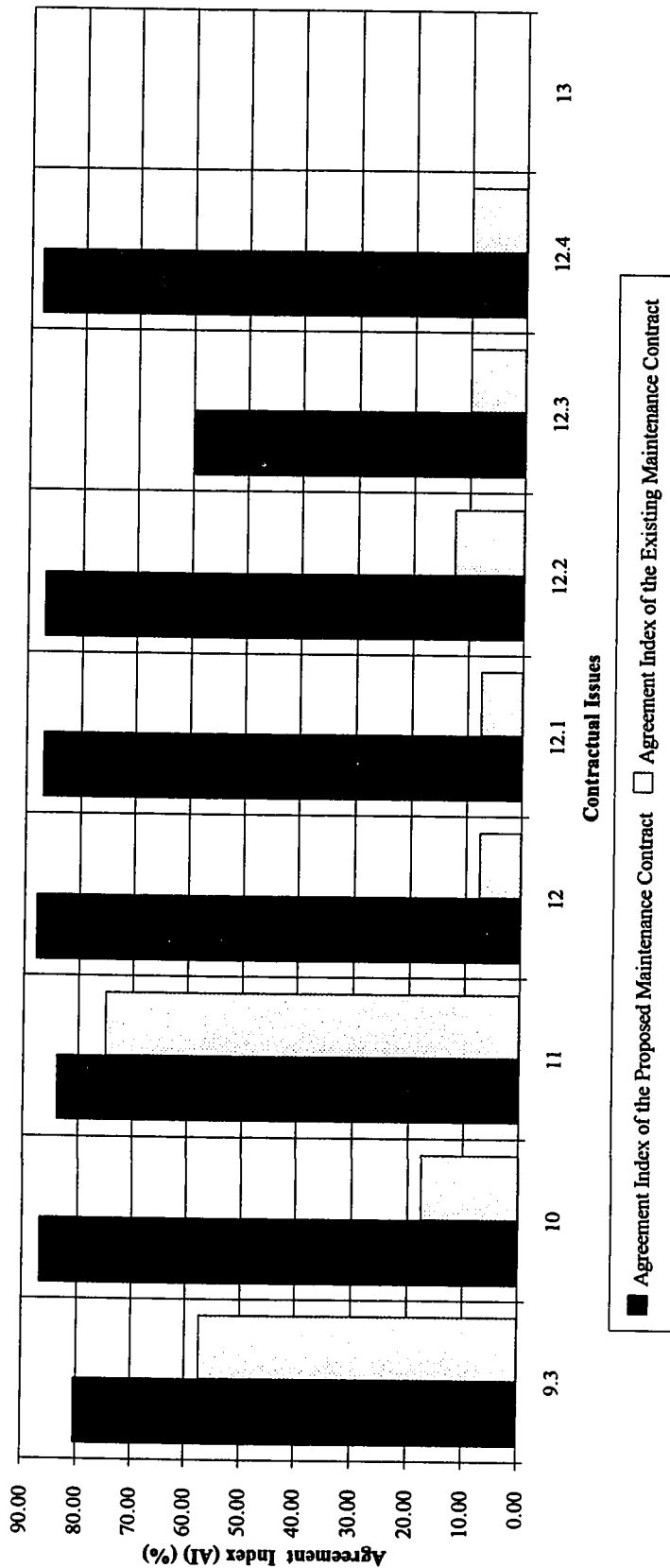


FIGURE 6.7: THE AGREEMENT INDEX OF THE PROPOSED AND EXISTING MAINTENANCE CONTRACTS OF THE FOURTH DOCUMENT

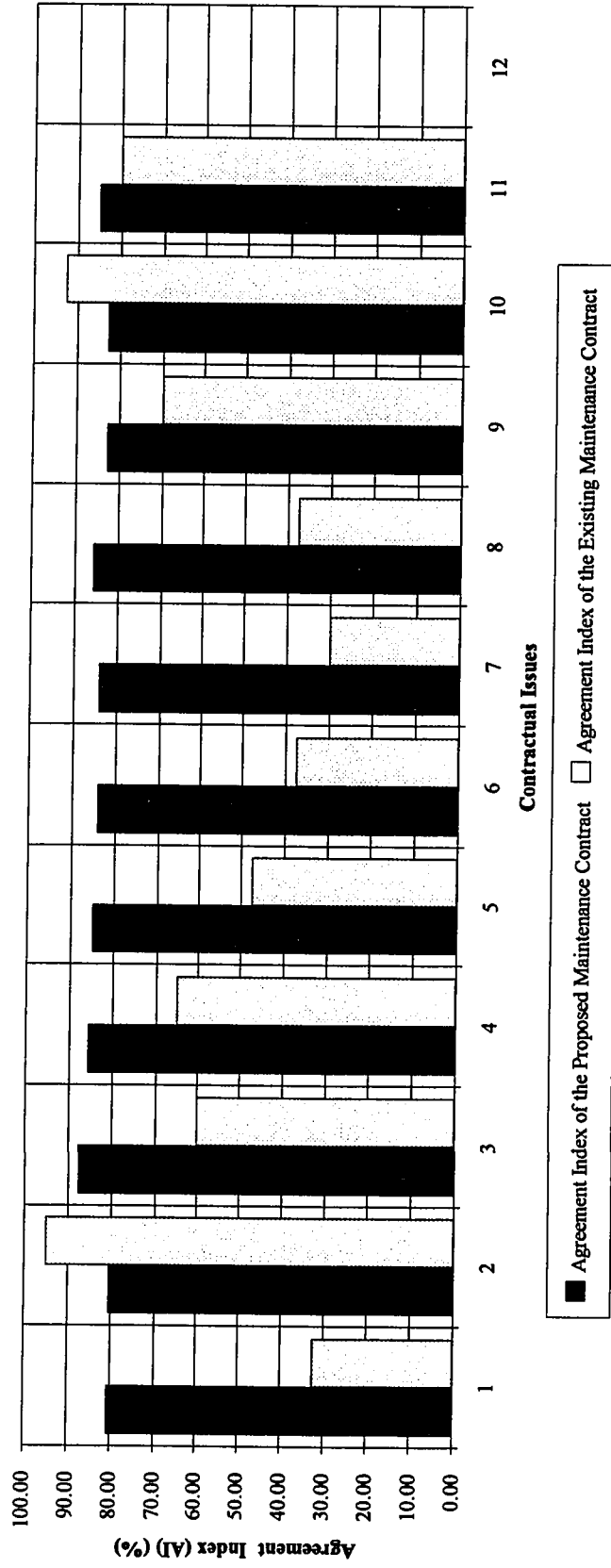


FIGURE 6.7: THE AGREEMENT INDEX OF THE PROPOSED AND EXISTING MAINTENANCE CONTRACTS OF THE FIFTH DOCUMENT

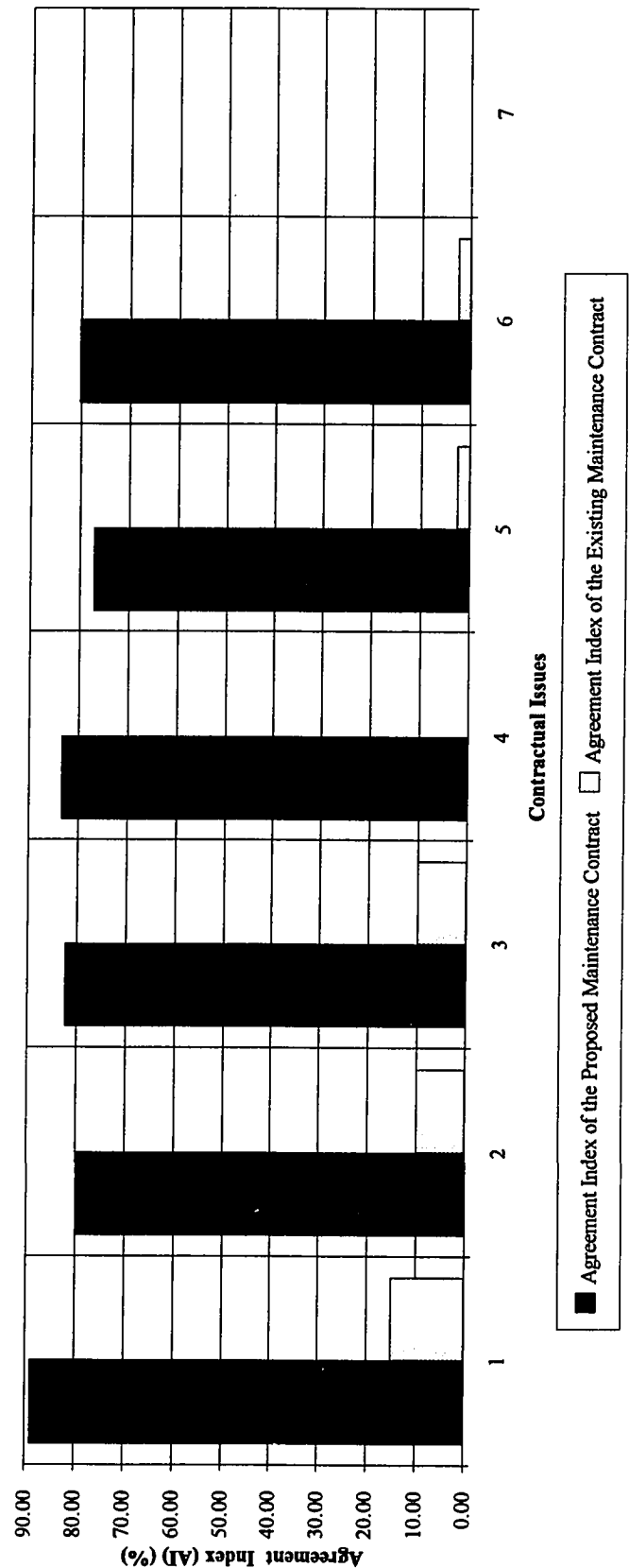
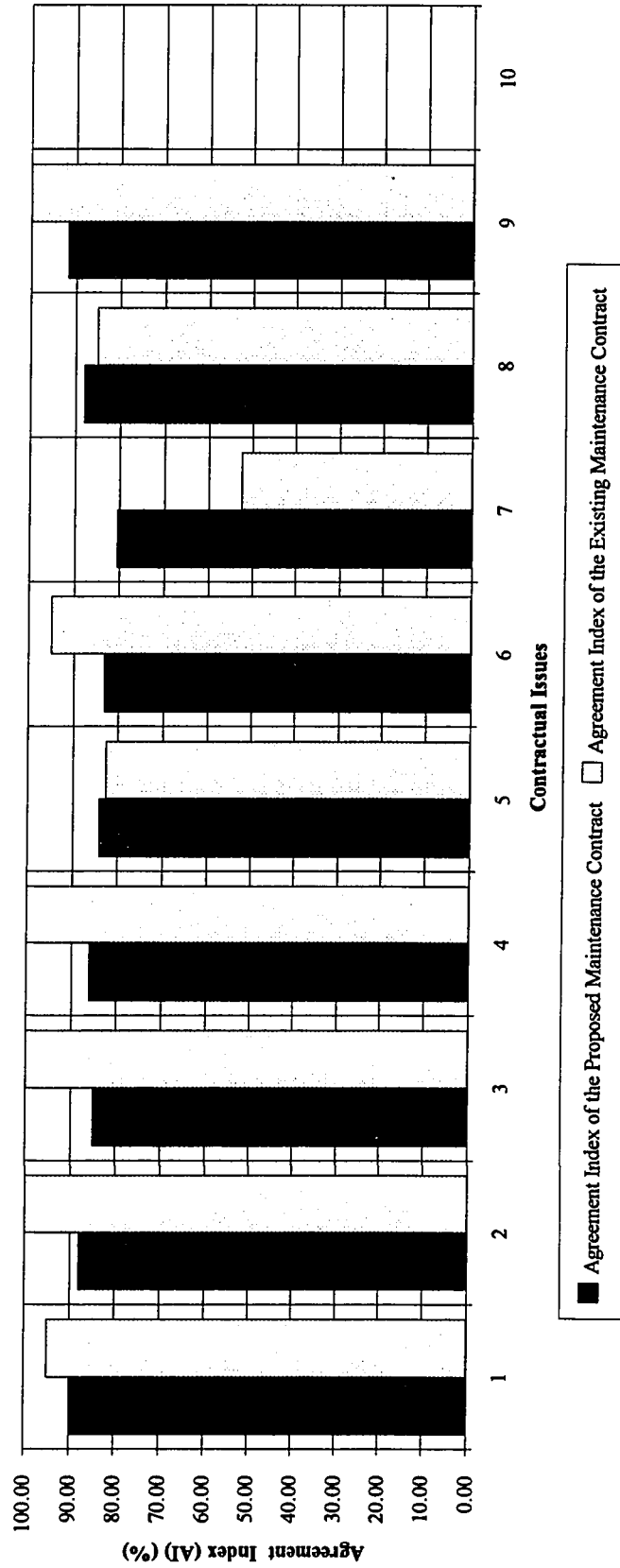


FIGURE 6.7: THE AGREEMENT INDEX OF THE PROPOSED AND EXISTING MAINTENANCE CONTRACTS OF THE SIXTH DOCUMENT



6.5 Results Findings (Summary):

The following Tables (6.25, 6.26, 6.27 and 6.28) and Figures (6.8 and 6.9) summarize the results of the questionnaires according to their ranks.

Table 6.25 Part One: Background Information Statistics (First and Second Ranks).

Question Number	Title of the Question	Question Outcome	Frequency	Percent (%)
* 1	Names of Governmental Agencies.	The number of respondents who have not written their office names.	77	78
		The number of respondents who have written their office names.	22	22
* 2	Names of the maintenance departments.	The number of the respondents who have not written their department names.	88	89
		The number of the respondents who have written their department names.	11	11
3	Maintenance departments experiences.	From five to ten years.	48	48
		From ten to twenty years.	37	37
4	Respondent's administrative position.	Maintenance contract supervisor.	50	51
		Director's of maintenance department.	22	23
5	The number of maintenance department personnel.	More than two hundred people.	36	36
		From one fifty to one hundred people.	28	28

Table 6.26 Part Two: Types of Maintenance and Operation Contracts Statistics (First and Second Ranks).

Question Number	Title of the Question		Question Outcome						Frequency	Percent (%)			
1	The execution of maintenance work.		Independent maintenance contractor.						50	50			
Direct labor.						45	45						
2	Maintenance contractor grades.		Grade number three.						40	40			
Grade number two.						30	30						
3	Types of buildings to be maintained.		Office buildings.						60	60			
Residential buildings.						30	30						
4	Areas of specialization in maintenance.		Electrical work.						100	25			
Mechanical work.						100	25						
*5	Standardized maintenance contracts.		Number of respondents selecting "no" choice.						72	73			
Number of respondents selecting "yes" choice.						27	27						
6	Types of building maintenance contracts.		Term contract.						40	40			
Fixed price contract.						25	25						
7	The suitability of maintenance contract types to governmental agencies.												
	Contract Types	Strongly Agree		Agree		Disagree		Strongly Disagree		Mean	Standard Deviation	Agreement Index	
		Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent				
		6 - Term Contract	38	38.00	56	56.00	6	6.00	0				0.00
		1- Fixed price Contract	32	32.00	56	56.00	12	12.00	0				0.00
8	The preparation of a maintenance contracts.		The maintenance department.						72	74			
Accounting Department.						17	17						
9	Level of coordination between offices.		An average level of coordination.						12	70			
Maximum level of coordination.						3	18						
10	Contract documents.		General conditions of the contract.						100	25			
Bill of quantities.						80	20						

* Questions that have two choices only.

**Table 6.27 Part Three: Proposed Standardized Public Building Maintenance Contract
(Contractual Issues in All Documents by Ranks).**

First Document: General Instruction to Bidders				
Rank	Contractual Issues	Mean	Agreement Index	Ordinal Scale
1	13 Preliminary guarantee (bid bond)	3.67	92	S. Agree
2	16 Bid presentation letter	3.63	91	S. Agree
3	1 Bid document package	3.62	91	S. Agree
4	8 Qualification of prospective bidders	3.53	88	S. Agree
5	9 List of personnel and supervisors to perform the work	3.51	88	S. Agree
6	15 Site visit and other required certificate	3.49	87	S. Agree
7	17 Bidder's previous experience in performing similar or comparable work	3.49	87	S. Agree
8	2 Selection of contractor	3.46	87	S. Agree
9	5 Site visit requirements	3.44	86	S. Agree
10	10 List of equipment to be used in the contract	3.40	85	S. Agree
11	4 Preparation of bids	3.39	85	S. Agree
12	6 Contract documents contradiction	3.34	84	S. Agree
13	7 Disqualified proposal	3.29	82	S. Agree
14	12 List of alternative materials and equipment	3.21	80	S. Agree
15	3 Foreign contractors regulations	3.13	78	S. Agree
16	14 Bidders reservations list	3.08	77	S. Agree
17	11 List of suppliers and sub-contractors	2.91	73	Agree
18	18 Others (specify) (added by respondents)	0.00	0	0

Second Document: General Conditions				
Rank	Contractual Issues	Mean	Agreement Index	Ordinal Scale
1	15 Compliance with the Kingdom laws, rules, customs and tradition	3.73	93	S. Agree
2	12 The contractor's communication with the owner	3.71	93	S. Agree
3	39 Calendar	3.69	92	S. Agree
4	35 Notices	3.69	92	S. Agree
5	9 Site hand-over	3.65	91	S. Agree
6	1 Definitions	3.65	91	S. Agree
7	5 Site visit inspection	3.64	91	S. Agree
8	11 Contractor manager or his representative authority	3.60	90	S. Agree
9	28 Contract duration	3.59	90	S. Agree
10	31 Changes and contract modification	3.58	90	S. Agree
11	32 Obligations upon suspension or termination	3.56	89	S. Agree
12	7 Final guarantee	3.53	88	S. Agree
13	16 Responsibilities, permits and licenses	3.53	88	S. Agree

Second Document: General Conditions				
Rank	Contractual Issues	Mean	Agreement Index	Ordinal Scale
14	20 Contract scope of work	3.53	88	S. Agree
15	18 Contractor vehicles identification	3.50	88	S. Agree
16	26 The provision of required equipments, materials and other installations	3.47	87	S. Agree
17	14 Supervision, personnel and language	3.46	87	S. Agree
18	33 Dispute settlement	3.45	86	S. Agree
19	27 Materials and personnel	3.43	86	S. Agree
20	10 Site utilities usage	3.42	86	S. Agree
21	38 Site fossil and heritage	3.39	85	S. Agree
22	45 Contractor equipment, supplies and tools	3.39	85	S. Agree
23	49 Accommodations of contractor personnel	3.38	85	S. Agree
24	41 Environmental protection	3.38	85	S. Agree
25	8 Pre-starting conference	3.36	84	S. Agree
26	6 Advance and progress payments	3.35	84	S. Agree
27	50 Site office requirements	3.34	84	S. Agree
28	43 Contract laws	3.33	83	S. Agree
29	40 Working hours	3.32	83	S. Agree
30	51 Advance payment (standard form)	3.32	83	S. Agree
31	52 Final guarantee (standard form)	3.32	83	S. Agree
32	48 Identification tags	3.30	83	S. Agree
33	22 Work approval	3.29	82	S. Agree
34	3 Major and marginal titles	3.28	82	S. Agree
35	4 Documents interpret each other	3.28	82	S. Agree
36	54 Periodical invoicing payment (standard form)	3.28	82	S. Agree
37	25 Incident precautions and compliance with safety measures	3.28	82	S. Agree
38	44 Operational locations and storing	3.26	82	S. Agree
39	46 The use of local transporation and loading system	3.23	81	S. Agree
40	53 Progress certificate (standard form)	3.23	81	S. Agree
41	55 Undertaking certificate (standard form)	3.23	81	S. Agree
42	13 Other contracts in the site	3.22	81	S. Agree
43	17 Taxes and dues	3.22	81	S. Agree
44	21 Rehabilitation work	3.19	80	S. Agree
45	30 Suspension of work	3.14	79	S. Agree
46	2 Single and plural utterance	3.13	78	S. Agree
47	23 Work progress, penalty and delay	3.11	78	S. Agree
48	37 Bribe and similar attitudes	3.11	78	S. Agree
49	34 Sham and swindle	3.06	77	S. Agree
50	19 Sub-contracting contracts	3.02	76	S. Agree
51	47 The use of local insurance, banking, real estate, and catering services	3.02	76	S. Agree
52	42 The ownership of invention	3.00	75	S. Agree
53	24 Owner supervisors	2.96	74	Agree
54	29 Termination at owner convenience	2.96	74	Agree
55	36 The contractor commission to obtain the contract	2.74	69	Agree
56	56 Others (specify) (added by respondents)	0.00	0	0

Third Document: Specific Conditions and Scope of Works				
Rank	Contractual Issues	Mean	Agreement Index	Ordinal Scale
1	12 Attachments	3.52	88	S. Agree
2	6 Safety measures and fire protection	3.49	87	S. Agree
3	10 Periodic reports	3.48	87	S. Agree
4	7 Maintenance work	3.39	85	S. Agree
5	3 Administration affairs	3.41	85	S. Agree
6	2 Organization and contractor personnel	3.38	85	S. Agree
7	1 General	3.37	84	S. Agree
8	5 Quality control and quality assurance	3.36	84	S. Agree
9	11 Property damages	3.36	84	S. Agree
10	9 Janitorial work	3.33	83	S. Agree
11	8 Installed system operation in the site	3.26	82	S. Agree
12	4 Procurement and supply	3.11	78	S. Agree
13	13 Others, (specify) (added by respondents)	0.00	0	0

Fourth Document: Bill of Quantities				
Rank	Contractual Issues	Mean	Agreement Index	Ordinal Scale
1	3 Spare parts consumption rate	3.51	88	S. Agree
2	4 Janitorial work rate	3.43	86	S. Agree
3	8 Equipment and tools rate	3.43	86	S. Agree
4	5 Maintenance work rate	3.40	85	S. Agree
5	11 Consumed materials procedure	3.40	85	S. Agree
6	6 Operation work rate	3.36	84	S. Agree
7	7 Emergency work rate	3.36	84	S. Agree
8	9 Payment procedure	3.31	83	S. Agree
9	10 Penalty and delay	3.31	83	S. Agree
10	1 The percentage of various works, personal payment and spare parts from the total contract cost	3.23	81	S. Agree
11	2 Contractor personnel rate	3.22	81	S. Agree
12	12 Others, (specify) (added by respondents)	0.00	0	0

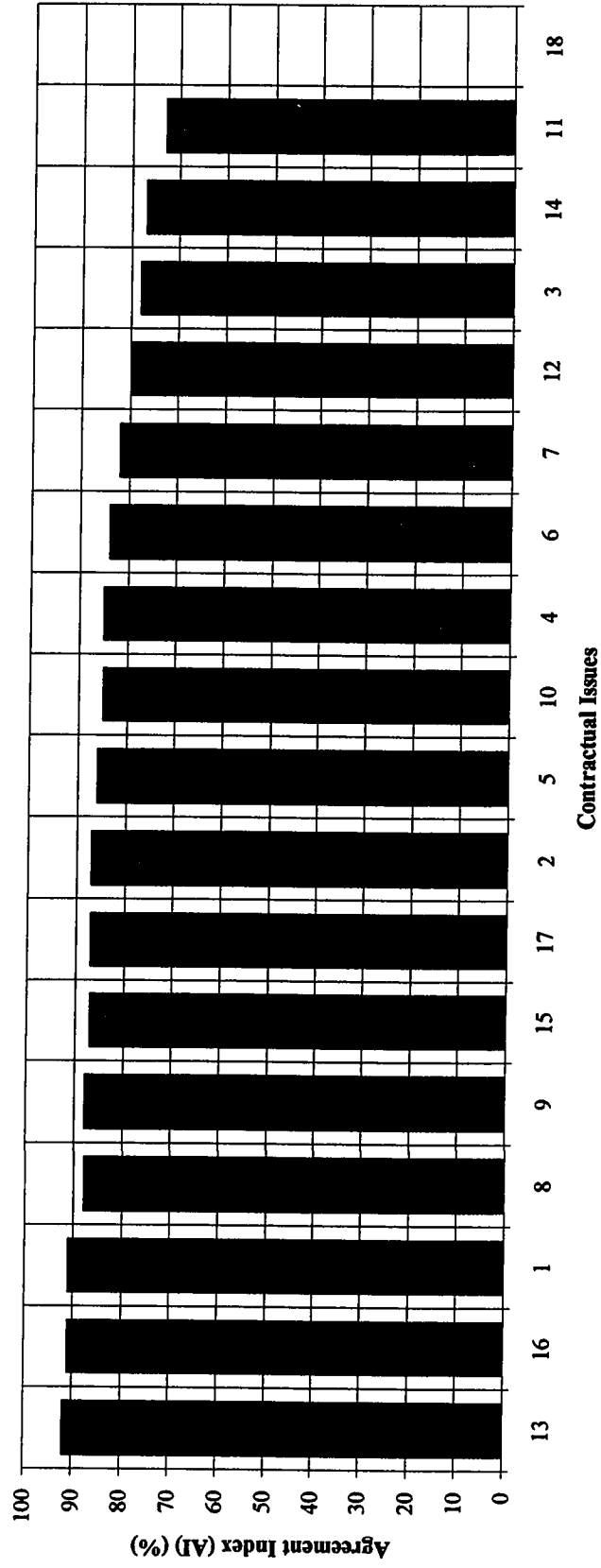
Fifth Document: Technical Specifications				
Rank	Contractual Issues	Mean	Agreement Index	Ordinal Scale
1	1 Technical specifications of installed systems	3.57	89	S. Agree
2	4 Owner and previous contractor reporting and communication system	3.33	83	S. Agree
3	3 Historical background data banks	3.29	82	S. Agree
4	6 Proclamation	3.21	80	S. Agree
5	2 List of systems manufacturers and dealers	3.19	80	S. Agree
6	5 Additional contract documents	3.09	77	S. Agree
7	7 Others, (specify) (added by respondents)	0.00	0	0

Sixth Document: Basic Contract Charter (Agreement Form)				
Rank	Contractual Issues	Mean	Agreement Index	Ordinal Scale
1	9 Owner and contractor signature	3.67	92	S. Agree
2	1 The application of government procurement laws and regulations	3.60	90	S. Agree
3	2 Required contract work	3.52	88	S. Agree
4	8 Prohibition of contract assignment	3.52	88	S. Agree
5	4 The contract duration	3.44	86	S. Agree
6	3 Location of the work	3.40	85	S. Agree
7	5 Contract cost and payment procedure	3.36	84	S. Agree
8	6 Owner representatives	3.32	83	S. Agree
9	7 Contractor representative	3.22	81	S. Agree
10	10 Others, (specify) (added by respondents)	0.00	0	0

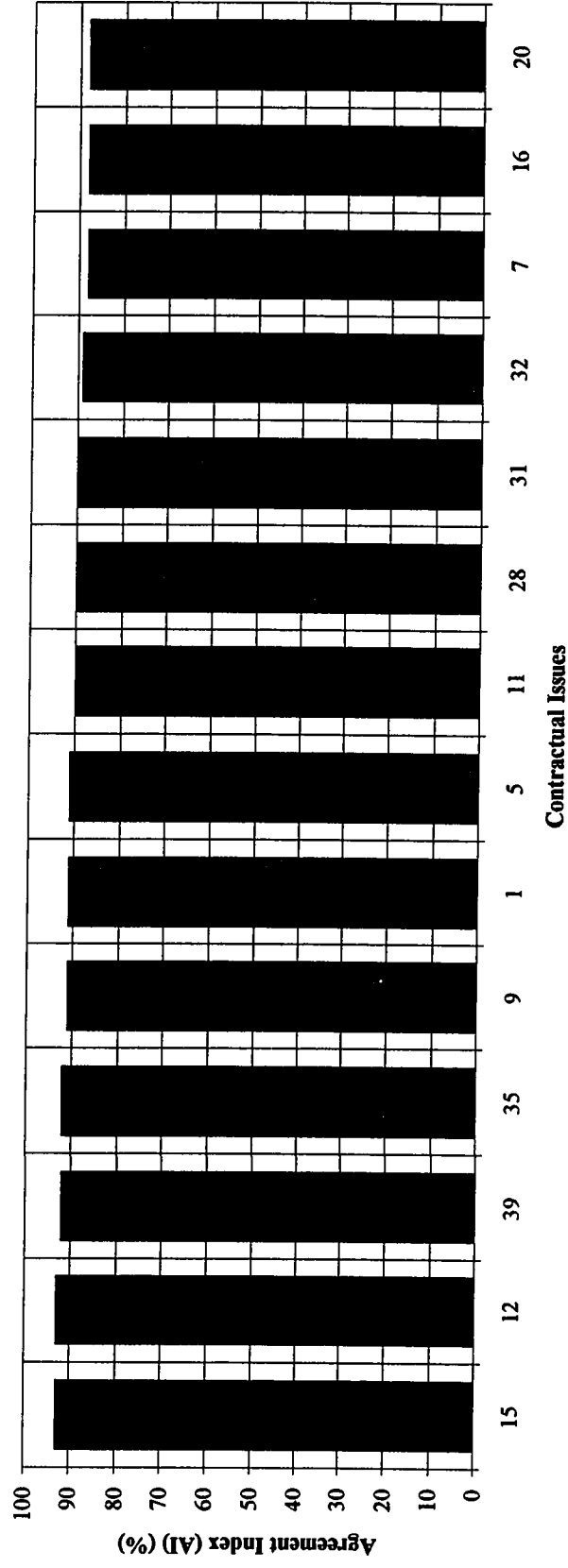
**Table 6.28 Part Three: Proposed Standardized Public Buildings Maintenance Contract
(Documents by Ranks)**

Rank	Documents Numbers	Number of Respondents	Strongly Agree		Agree		Disagree		Strongly Disagree		Mean	Standard Deviation	Agreement Index
			Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent			
1	6	90	41	45.56	49	54.44	0	0.00	0	0.00	3.46	0.69	87
2	1	93	48	51.61	36	38.71	6	6.45	3	3.22	3.39	0.69	85
3	4	90	35	38.89	53	58.89	2	2.22	0	0.00	3.37	0.68	84
4	3	92	39	42.39	48	52.17	4	4.35	1	1.09	3.36	0.67	84
5	2	92	38	41.34	48	52.17	5	5.43	1	1.09	3.34	0.67	84
6	5	92	30	32.61	57	61.96	5	5.43	0	0.00	3.27	0.68	82
Total		549	231	252.40	291	318.40	22	23.88	5	5.40	20.19	4.08	506.00
Average Score of all Documents		92	39	42.39	48	52.17	4	4.35	1	1.09	3.36	0.68	84

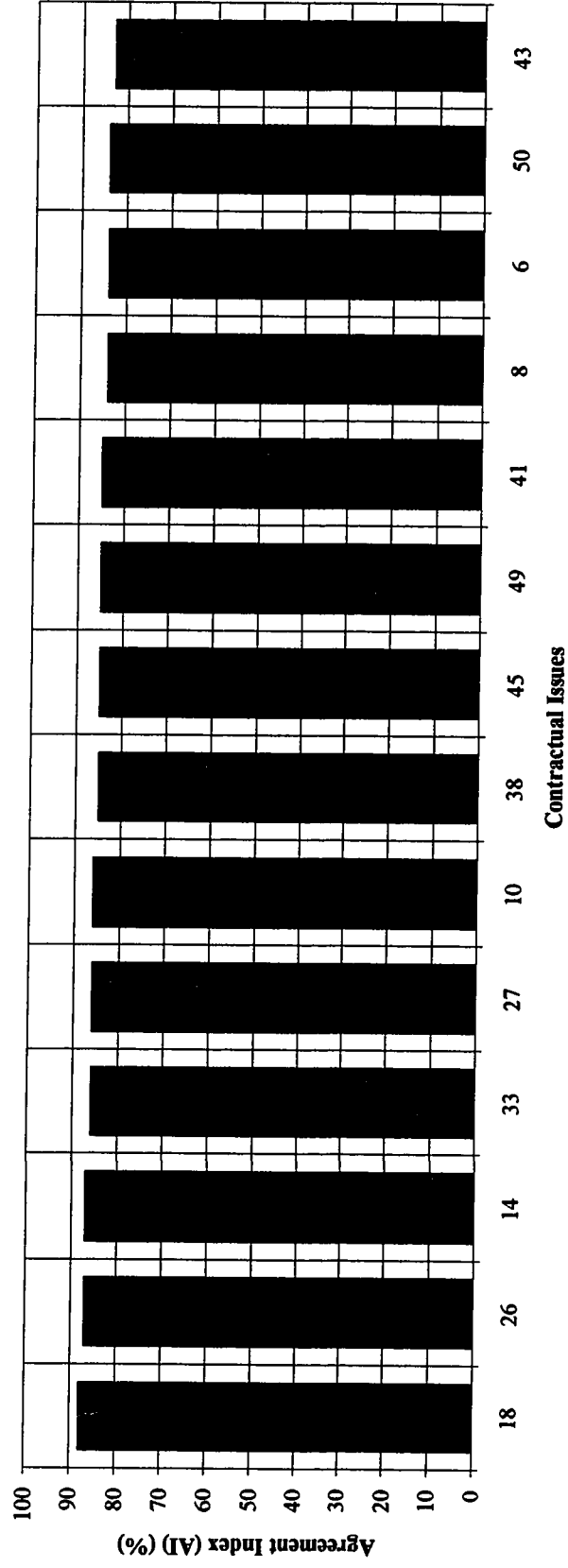
**FIGURE 6.8 PART THREE: STANDARDIZED PUBLIC BUILDING MAINTENANCE CONTRACT
(CONTRACTUAL ISSUES OF THE FIRST DOCUMENT BY RANKS)**



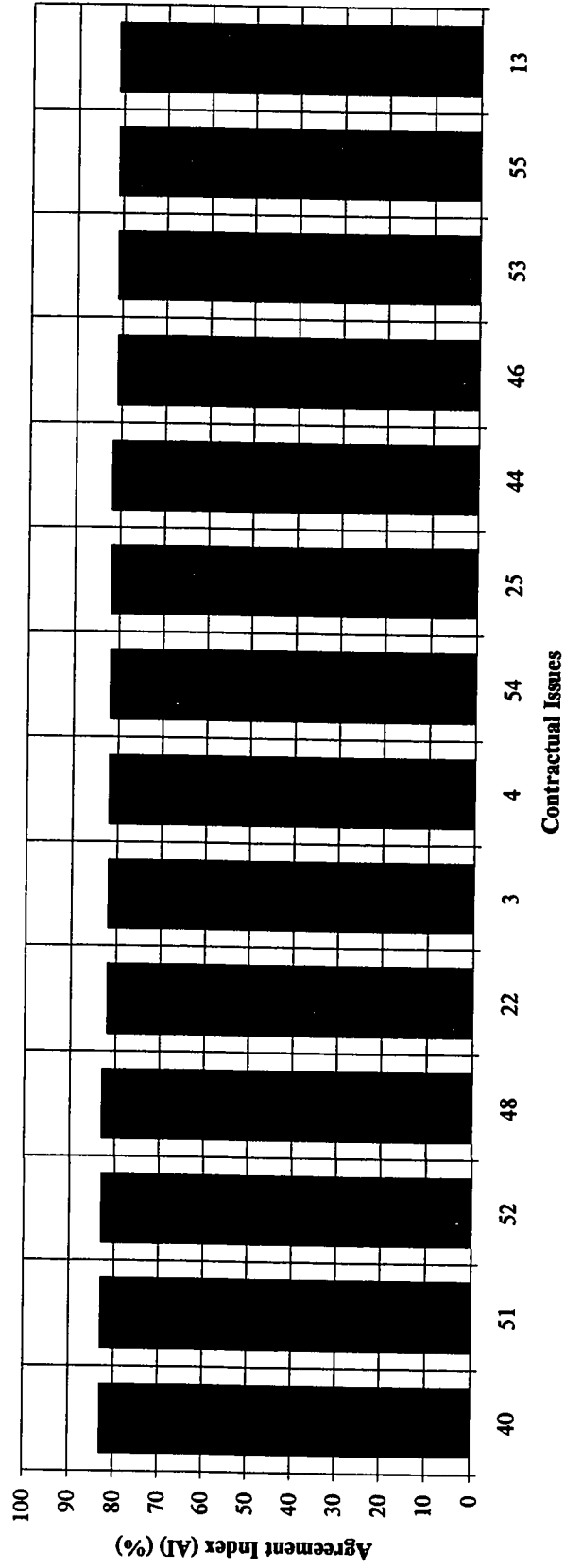
**FIGURE 6.8 PART THREE: STANDARDIZED PUBLIC BUILDING MAINTENANCE CONTRACT
(CONTRACTUAL ISSUES OF THE SECOND DOCUMENT BY RANKS)**



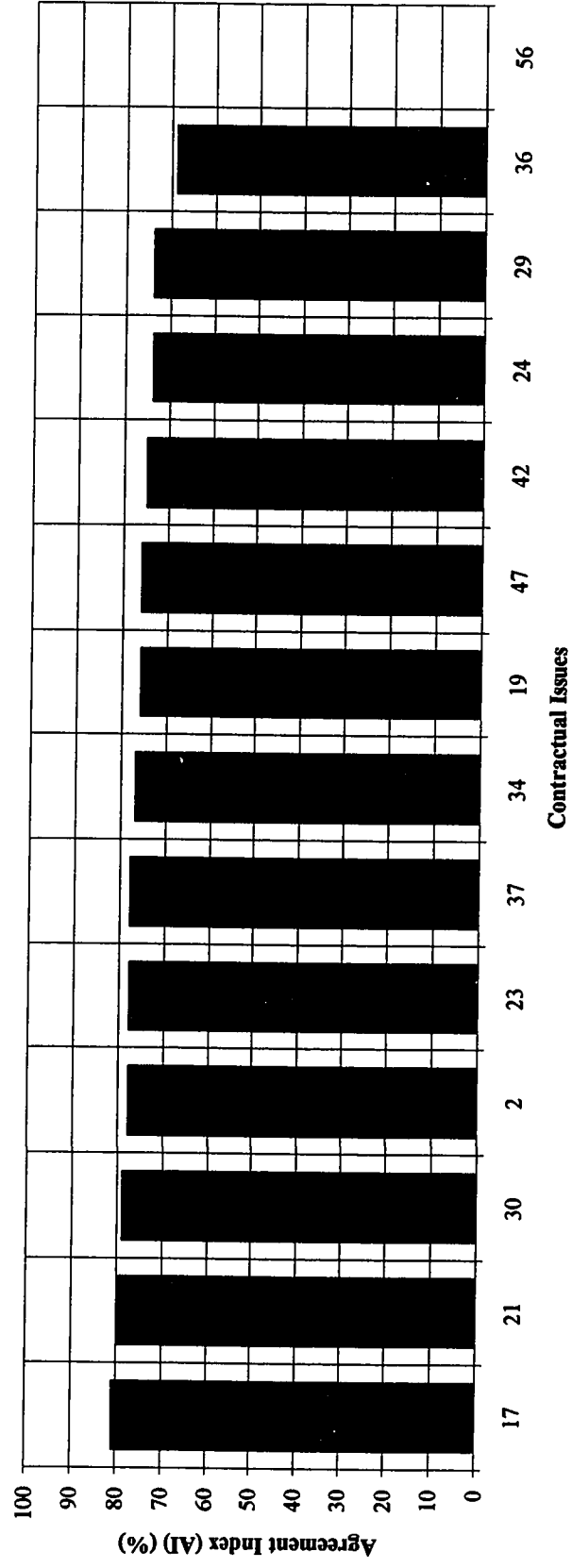
**FIGURE 6.8 PART THREE: STANDARDIZED PUBLIC BUILDING MAINTENANCE CONTRACT
(CONTRACTUAL ISSUES OF THE SECOND DOCUMENT BY RANKS)**



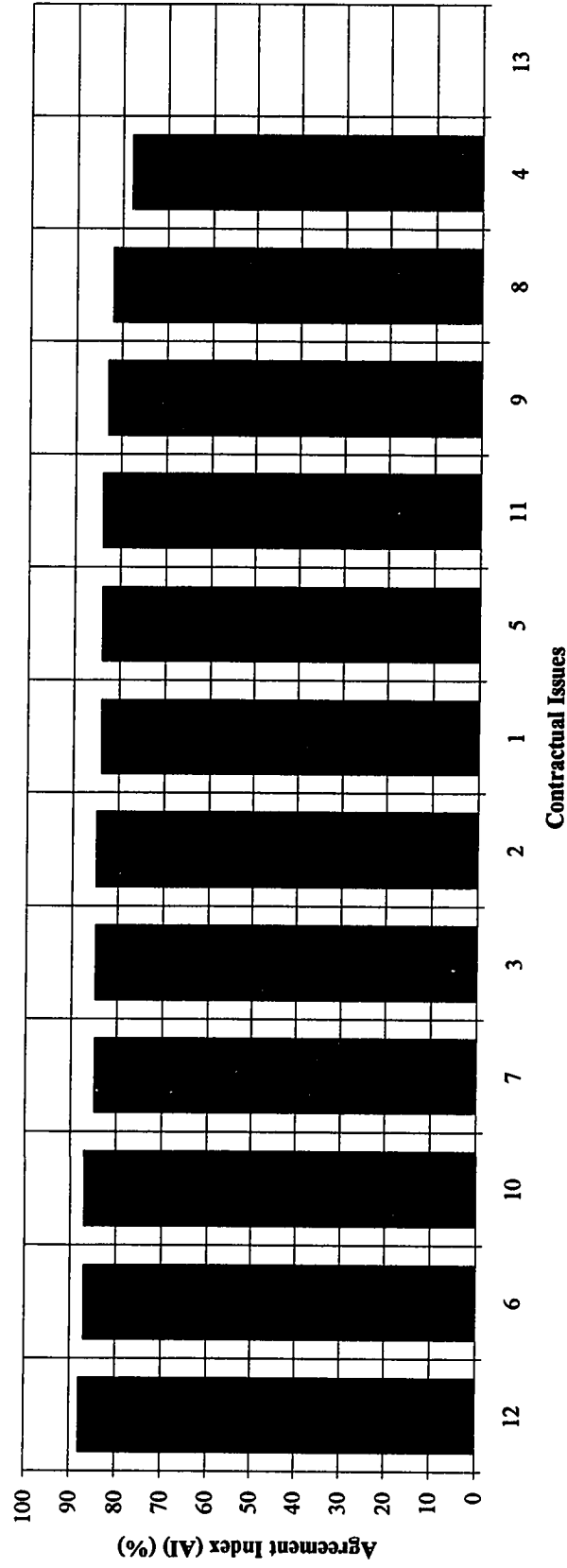
**FIGURE 6.8 PART THREE: STANDARDIZED PUBLIC BUILDING MAINTENANCE CONTRACT
(CONTRACTUAL ISSUES OF THE SECOND DOCUMENT BY RANKS)**



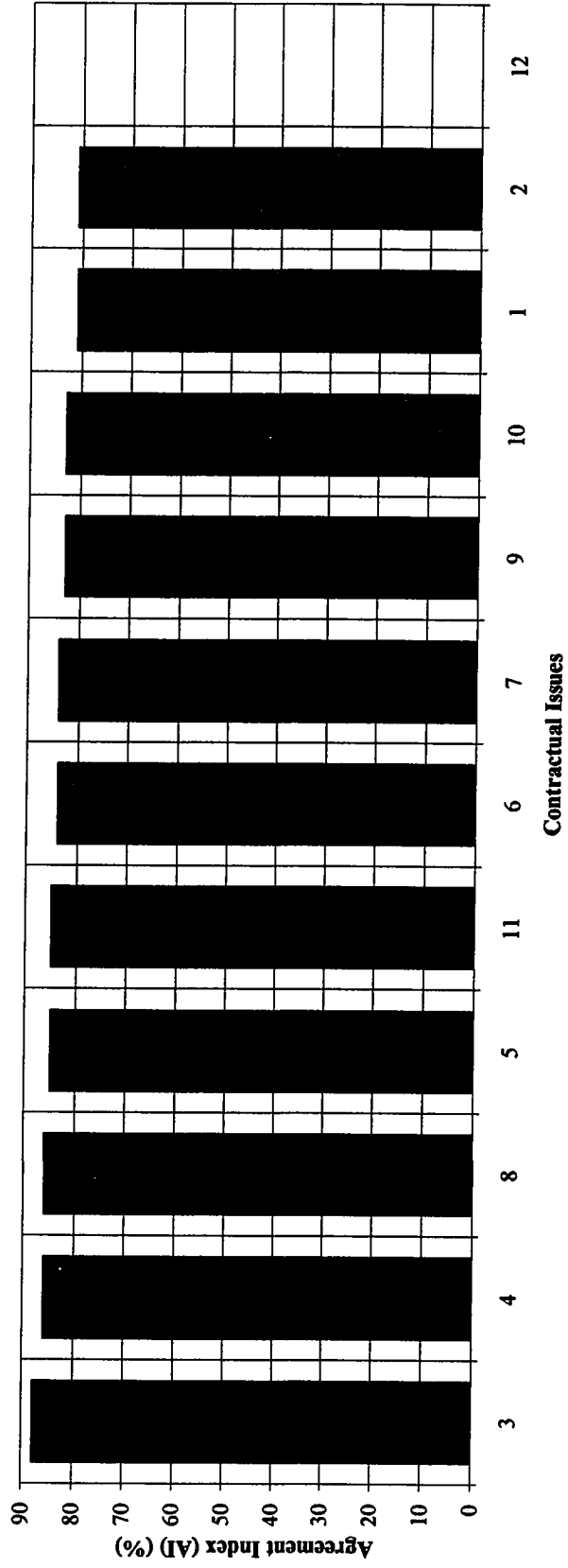
**FIGURE 6.8 PART THREE: STANDARDIZED PUBLIC BUILDING MAINTENANCE CONTRACT
(CONTRACTUAL ISSUES OF THE SECOND DOCUMENT BY RANKS)**



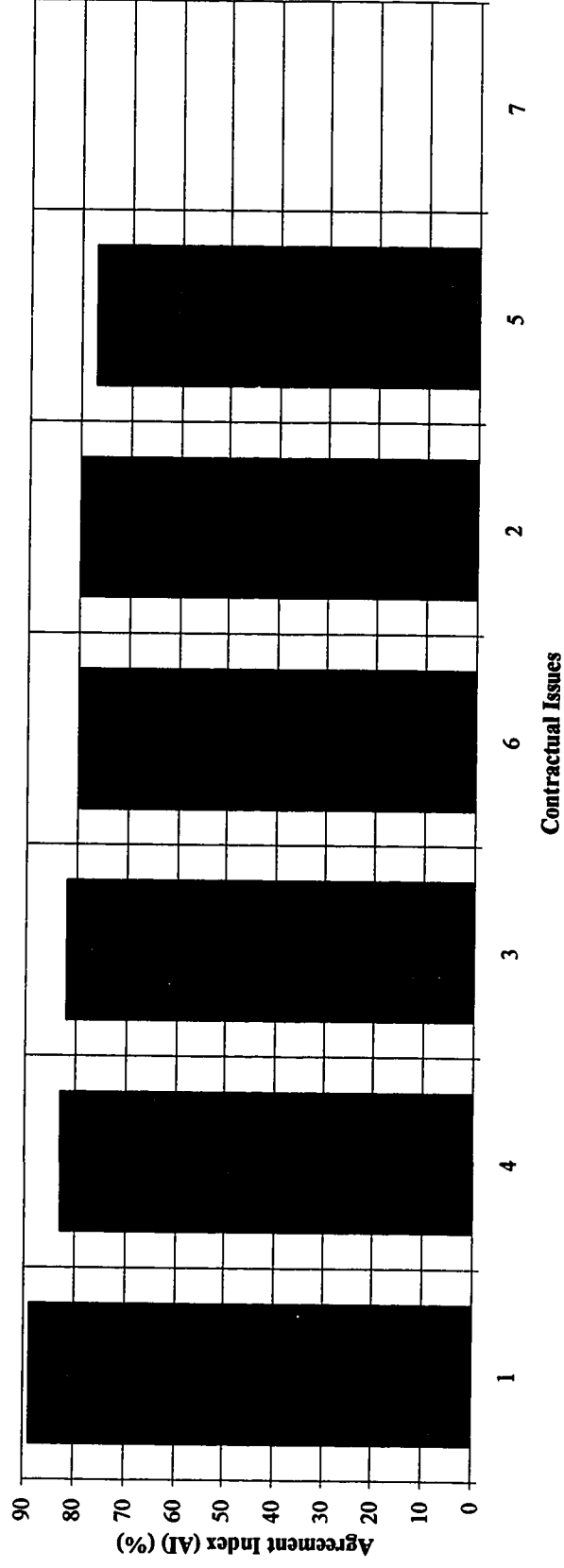
**FIGURE 6.8 PART THREE: STANDARDIZED PUBLIC BUILDING MAINTENANCE CONTRACT
(CONTRACTUAL ISSUES OF THE THIRD DOCUMENT BY RANKS)**



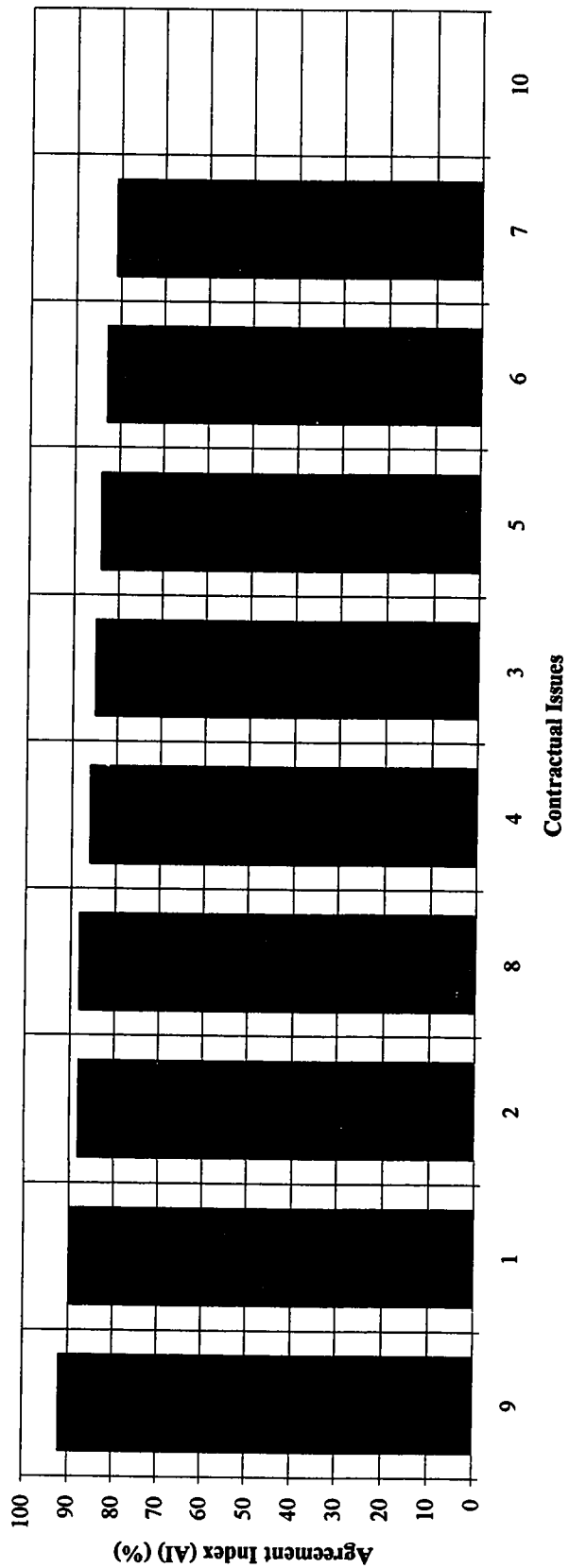
**FIGURE 6.8 PART THREE: STANDARDIZED PUBLIC BUILDING MAINTENANCE CONTRACT
(CONTRACTUAL ISSUES OF THE FOURTH DOCUMENT BY RANKS)**



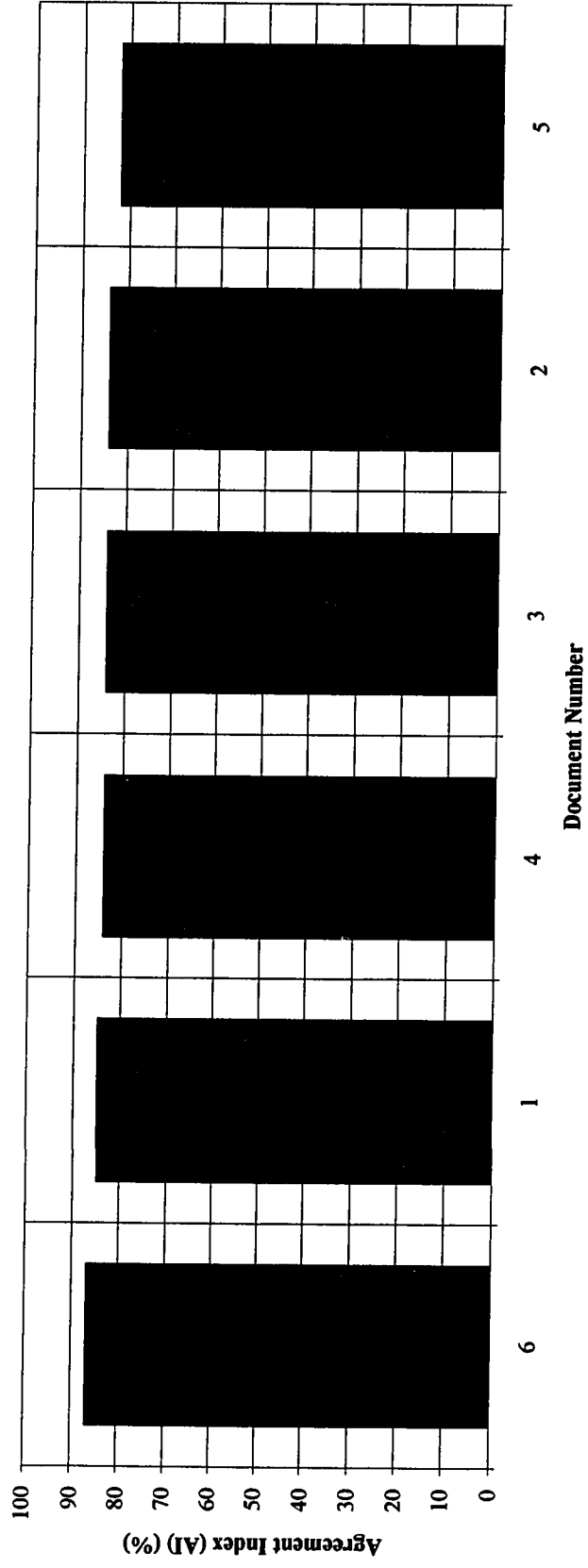
**FIGURE 6.8 PART THREE: STANDARDIZED PUBLIC BUILDING MAINTENANCE CONTRACT
(CONTRACTUAL ISSUES OF THE FIFTH DOCUMENT BY RANKS)**



**FIGURE 6.8 PART THREE: STANDARDIZED PUBLIC BUILDING MAINTENANCE CONTRACT
(CONTRACTUAL ISSUES OF THE SIXTH DOCUMENT BY RANKS)**



**FIGURE 6.9 PROPOSED STANDARDIZED PUBLIC BUILDING MAINTENANCE CONTRACT
(DOCUMENTS BY RANKS)**



CHAPTER SEVEN: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

7.1 Summary:

Most of the maintenance work in the governmental offices in Saudi Arabia is carried out by independent contractors. To date, no effort has been made to develop a Standardized Maintenance Contract for use by all the governmental agencies in the Kingdom. This is due to the fact that maintenance activities were viewed negatively in a number of governmental offices. Maintenance work is considered to be a kind of disaster repairing function to be fixed whenever it's needed.

There is little about building maintenance contracts that is really distinctive, legally, when compared with other construction and industrial contracts. Maintenance contracts, as all public tenders in Saudi Arabia, are subjected completely to Government Procurement Laws and Regulations. Its role is to regulate, control and insure that all procurements and purchases of governmental services, supplies and implementation of project contracts. A detailed investigation in government procurement laws and regulations revealed that there is no distinction between the governmental construction contracts and maintenance contracts from a law and regulations point of view. Also there is no systematic procedure to update the construction and maintenance contractual laws and regulations.

Thus, there were needs to study and evaluate the existing building maintenance contracts of the Governmental offices and to develop a Standardized Public Building Maintenance Contract to be used for all the Governmental Agencies in Saudi Arabia.

In this study, the documents and literature that contributed to the public maintenance contracts were presented and discussed by defining the important documents to be included in the maintenance contract and its related contractual issues. Each major document was discussed in terms of its importance for the maintenance contract and the benefits to be achieved from incorporating the documents in the contract.

A questionnaire was developed to measure the opinion of the respondents toward the proposed Standardized Public Building Maintenance Contract. The questionnaire was distributed to all governmental departments that

have the authority to tender and supervise the execution of public maintenance contracts and to form the population of the study. The questionnaire contains questions which are divided into three parts related to the proposed building maintenance contract. For the third part of the questionnaire which is the proposed standardized building maintenance contract, the opinions are registered on a 4-point Likert scale ranging from "strongly agree" to "strongly disagree".

The results of this study are generated from one hundred (100) responses to the questionnaire mailed to one hundred and ten (110) governmental departments that represent the population of the study for an overall responses of ninety-one percent (91%).

7.2 Conclusions:

The survey analysis indicates and reveals the following conclusions:

Part One - Background Information:

1. A few respondents (22 out of 99) attempted to mention the governmental office name.
2. A few respondents (11 out of 99) attempted to mention the name of the designated office supervising maintenance activities.
3. Approximately half of the respondents (48 out of 100) indicated that they have from five to ten years experience in running maintenance work.
4. Approximately half of the respondents (50 out of 98), who answered the questionnaire, work as a maintenance contractor supervisor.
5. Approximately thirty six percent (36%) of the respondents (36 out of 100) indicated that they have more than two-hundred persons working in their maintenance department.

Part Two - Types of Maintenance and Operation Contracts:

1. Forty five (45) of the respondents indicated that the maintenance work in their governmental offices is executed by direct labor.

2. Forty percent (40%) of respondents indicated that the minimum grade required by their office is grade number three.
3. Sixty percent (60%) of the buildings to be maintained in the governmental offices are office type buildings.
4. Twenty five percent (25%) of the respondents indicated that they are specialized in electrical and mechanical work.
5. Twenty seven percent (27%) of the respondents mentioned that they have a standardized building maintenance contract, which is considered to be a very low percentage.
6. Forty percent (40%) of the respondents stated that Term-Contract is the most often used type of maintenance contracts in the governmental offices.
7. Term-Contracts are considered to be the best type of contractual arrangements for the governmental offices, with an agreement index of eighty-three percent (83%).
8. Seventy four percent (74%) of the respondents supported that maintenance contracts must be prepared by the maintenance departments in the governmental offices.
9. High support (12 out of 17) was shown for the use of an average level of coordination between the offices in the governmental offices in case of maintenance contract prepared by accounting offices.
10. The general conditions of the contract twenty five percent (25%) and bill of quantities twenty percent (20%) were considered by the respondents to be the most important documents to be incorporated in the public building maintenance contract.

Part Three: Proposed Standardized Public Building Maintenance Contract Document:

1. Documents (contractual issues) that have received the highest ranks respectively and fall within the strongly agree range are as follows:

First Document: General Instruction To Bidders:

1. Preliminary guarantee (bid bond).
2. Bid presentation letter.
3. Bid document package.
4. Qualification of prospective bidders.
5. List of personnel and supervisors to perform the work.
6. Site visit and other required certificate.
7. Bidder's previous experience in performing similar or comparable work.
8. Selection of contractor.
9. Site visit requirements.
10. List of equipment to be used in the contract..
11. Preparation of bids.
12. Contract documents contradiction.
13. Disqualified proposal.
14. List of alternative materials and equipment.
15. Foreign contractors regulations.
16. Bidders reservations list.

Second Document: General Conditions:

1. Compliance with the Kingdom's laws, rules, customs and tradition.
2. The contractor's communication with the owner.
3. Calendar.
4. Notices.

5. Site hand-over.
6. Definitions.
7. Site visit inspection.
8. Contractor manager or his representatives authority.
9. Contract duration.
10. Changes and contract modification.
11. Obligations upon suspension or termination.
12. Final guarantee.
13. Responsibilities, permits and licenses.
14. Contract scope of work.
15. Contractor vehicle identification.
16. The provision of required equipments, materials and other installations.
17. Supervision, personnel and language.
18. Dispute settlement.
19. Materials and personnel.
20. Site utilities usage.
21. Site fossil and heritage.
22. Contractor equipment, supplies and tools.
23. Accommodations for contractor's personnel.
24. Environmental protection.
25. Pre-stating conference.
26. Advance and progress payments.

27. Site office requirements.
28. Contract laws.
29. Working hours.
30. Advance payment (standard form).
31. Final guarantee (standard form).
32. Identification tags.
33. Work approval.
34. Major and marginal titles.
35. Documents interpret each other.
36. Periodical invoicing payment (standard form).
37. Accident precautions and compliance with safety measures.
38. Operational locations and storing.
39. The use of local transportation and loading system.
40. Progress certificate (standard form).
41. Undertaking certificate (standard form).
42. Other contracts at the site.
43. Taxes and dues.
44. Rehabilitation work.
45. Suspension of work.
46. Single and plural utterance.
47. Work progress, penalty and delay.
48. Bribe and similar attitudes.
49. Sham and swindle.

50. Sub-contracting contracts.
51. The use of local insurance, banking, real estate, and catering services.
52. The ownership of invention.

Third Document: Specific Conditions and Scope of Works:

1. Attachments.
2. Safety measures and fire protection.
3. Periodic reports.
4. Maintenance work.
5. Administration affairs.
6. Organization and contractor personnel.
7. General.
8. Quality control and quality assurance.
9. Property damages.
10. Janitorial work.
11. Installed system operation in the site.
12. Procurement and supply.

Fourth Document: Bill of Quantities:

1. Spare parts consumption rate.
2. Janitorial work rate.
3. Equipment and tools rate.
4. Maintenance work rate.
5. Consumed materials procedure.

6. Operation work rate.
7. Emergency work rate.
8. Payment procedure.
9. Penalty and delay.
10. The percentage of various works, personal payment and spare parts from the total contract cost.
11. Contractor personnel rate.

Fifth Document: Technical Specifications:

1. Technical specifications of installed systems.
2. Owner and previous contractor reporting and communication system.
3. Historical background data banks.
4. Proclamation.
5. List of system manufacturers and dealers.
6. Additional contract documents.

Sixth Document: Basic Contract Charter (Agreement Form):

1. Owner and contractor signatures.
2. The application of government procurement laws and regulations.
3. Required contract work.
4. Prohibition of contract assignment.
5. The contract duration.
6. Location of the work.
7. Contract cost and payment procedure.
8. Owner representatives.
9. Contractor representative.

2. Documents (contractual issues) that have received the highest ranks respectively, and fall within the agree range are as follows:

First Document: General Instruction to Bidders:

1. List of suppliers and sub-contractors.

Second Document: General Conditions:

1. The contractor commission to obtain the contract.
2. Owner supervisions.
3. Termination at owner convenience.

Existing Maintenance Contract Versus Proposed Maintenance Contract:

The outcome of the correlation analysis indicated very clearly that there is a high correlation between the existing and proposed maintenance contracts. The linear equation that best represents the relationship between the existing proposed contract can be shown as follows:

$$\begin{array}{lcl} \text{Proposed Maintenance Contract} & = & 1.333862 \times \text{Existing Maintenance} \\ \text{(PMC)} & & \text{Contract (EMC)} \end{array}$$

$$\begin{array}{lcl} \text{Standard Error} & = & 0.06234465 \end{array}$$

7.3 Recommendations:

1. The proposed Standardized Public Building Maintenance Contract can be considered as a basis for the development of a unified public building maintenance contract for all the governmental office in Saudi Arabia.
2. Legislators should consider some of the results obtained in this study for incorporation into the maintenance contract.
3. A systematic procedural method should be developed and used for strict enforcement and implementation of the Standardized Public Building Maintenance Contract in the governmental offices.
4. An updating procedural system should be developed to include all the new rules and regulations related to maintenance contracts issued by Ministers of Council or other governmental offices.

5. Governmental authorities are urged to initiate contract preparation seminars where consultants and contractors, as well as competent government personnel, are invited to participate to discuss the documents and the contractual issues and to share and exchange experiences and knowledge in a healthy environment.
6. A Standardized Maintenance Contract Manual, which includes all necessary information for the preparation of maintenance contracts should be developed and used to assist governmental authorities to prepare the contracts. Competent government authorities such as the Ministry of Communication, Ministry of Municipal and Rural Affairs and Ministry of Housing and Public Work are urged to take the initiative of developing such a manual.
7. A computerized data bank system should be developed using the experience of other countries. The Ministry of Finance and National Economy is urged to take the initiative in developing such data banks which should include the specification and general condition of all maintenance contracts.
8. "Coordination Departments" and "Data Collection Departments" should be established to facilitate the process of the development of a standardized maintenance contract which satisfies all the governmental authorities needs.

7.4 Recommendation for Future Studies:

1. This study is limited to the client (governmental offices) point of view. Research could be conducted to study the other related parties point of view, such as contractors, consultants and purchasing department directors.
2. Developing a complete written maintenance contract which includes descriptive information about each document and its related contractual issues.
3. Developing a maintenance law and regulations manual that includes all laws and regulations related to maintenance work in the governmental offices of Saudi Arabia. This will include ministerial circulars, government procurement laws, regulation and others.

APPENDIX A - LIST OF GOVERNMENTAL AGENCIES

LIST OF GOVERNMENTAL AGENCIES

1. Royal Air Defence Forces
2. General Directorate of Military Work
3. General Directorate of Passport
4. General Directorate of Civil Defence
5. General Directorate of Road Traffic
6. Civil Affair Authority
7. Ministry of Pilgrimage
8. Ministry of Commerce
9. Ministry of Municipal and Rural Affairs
10. Ministry of Education
11. Ministry of Petroleum and Mineral Resources
12. Ministry of Work and Social Affair
13. Ministry of Health - General Directorate of Health Affairs in Tabuk Region
14. Ministry of Post, Telephone and Telegraph
15. Ministry of Information
16. Ministry of Industry and Electricity
17. Ministry of Islamic Affairs, Endowments, Dawa'a and Guidance
18. Ministry of Justice
19. Ministry of Finance and National Economy
20. Presidency of the Holy Mosque and Prophet Mosque
21. Makkah Principality
22. Real State Development Fund
23. Makkah Education Department
24. Saudi American Oil Company- Saudi Aramco
25. Saudi Consolidated Electricity Company in the Western Region
26. General Cars Syndicate
27. General Directorate of Saudi Airlines
28. Presidency of Girls Education
29. Muslim World League
30. General Directorate of Drainage Combat
31. The Holy Makkah Police Station
32. General Presidency for the Protection of Virtue and Suppression of Vices
33. General Security Specialist Training Center
34. National Guards Presidency
35. The Observation and Investigation Authority
36. Personal Housing of Security Forces Hospital in Riyadh
37. Personal Housing of Security Forces in Tabuk
38. Saudi Arabian Oil Company - Saudi Aramco
39. The General Presidency of Holy Mosque and Prophet Mosque
40. Ministry of Health - General Directorate of Health Affairs in Al-Maddinah Region

**APPENDIX B - ARABIC AND ENGLISH VERSION OF THE
QUESTIONNAIRE**

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

Ministry of Higher Education
King Fahd University of Petroleum & Minerals
COLLEGE OF ENVIRONMENTAL DESIGN
ARCHITECTURAL ENGINEERING DEPARTMENT



وزارة التعليم العالي
جامعة الملك فهد للبترول والمعادن
كلية تصميم البيئة
قسم الهندسة المعمارية

سعادة مدير

السلام عليكم ورحمة الله وبركاته ،،

نفيدكم ان برنامج الهندسة المعمارية بجامعة الملك فهد للبترول والمعادن يقوم بدراسة توحيد عقود الصيانة والتشغيل العامة بكافة الدوائر الحكومية في المملكة العربية السعودية وتهدف هذه الدراسة الى توحيد الوثائق والبنود التعاقدية المدرجة بالعقد ، وكذلك إضافة كل الانظمة والقوانين والتعليمات الصادرة من الجهات الحكومة والتي تنظم علاقة صاحب العمل بالمقاول .

مرفق طيه الإستبانة المعدة لإستطلاع مرئيات مدراء الإدارات الحكومية المعنية بالتنفيذ والإشراف على عقود الصيانة والتشغيل العامة ، لذا نأمل من سعادتكم التكرم بإجابتها او إحالتها الى الجهة المختصة لديكم علماً بأن هذه الدراسة تم إعدادها لغرض اكاديمي بحث وتعتبر جزء من رسالة الماجستير المقدمة من قبل الطالب طلال بن علي الحازمي في الهندسة المعمارية حيث ستشكل نتائج هذه الإستبانة عنصراً رئيسياً للوصول الى نتائج مفيدة وقابلة للتطبيق لإنشاء الله .

نأمل سرعة تجاوبكم لما لذلك من اكبر الأثر في إنجاح هذه الرسالة ، مع خالص تحياتي وتقديري لتعاونكم المثمر .

والسلام عليكم ورحمة الله وبركاته ،،،،،

د . عبدالمحسن بن عبدالله الحماد
الاستاذ المشارك بقسم الهندسة المعمارية
كلية تصميم البيئة

جامعة الملك فهد للبترول والمعادن
ص ٠ ب ٢٢٢ الظهران ٣١٢٦١

بسم الله الرحمن الرحيم

استبانة توحيد عقود صيانة المباني العامة

في المملكة العربية السعودية

التاريخ : / / ١٤١٥هـ - / / ١٩٩٤م

جامعة الملك فهد للبترول والمعادن

كلية تصاميم البيئة

برنامج الهندسة المعمارية

تمهيد

إرشادات تعبئة الاستبانة :-

يرجى الاطلاع على التعليمات الآتية قبل الشروع في تعبئة الاستبانة المرفقة :-

١- تتكون الاستبانة من ثلاثة اجزاء رئيسية :-

الجزء الاول : معلومات عامة

الجزء الثاني : انماط عقود الصيانة والتشغيل

الجزء الثالث : الوثائق والمستندات المقترحة لعقد الصيانة والتشغيل العام الموحد

يرجى قراءة جميع العبارات الواردة في الاستبانة بدقة وذلك قبل الشروع في الإجابة ، ومن ثم يتم وضع علامة (/) في المكان المحدد والذي يتفق مع إجابتك ، فإن لم تجد الإجابة او الإختيارات التي تمثل رأيك فإنه يمكنك إبداء مقترحاتك في الفراغ المحدد لذلك وبخط واضح وذلك فيما يخص الجزء الاول والثاني . كما تتطلب الاجابة على الجزء الثالث والسؤال السابع من الجزء الثاني تحديد درجة الموافقة حيث وضعت لها اربع درجات على النحو الآتي :-

اوافق بشدة - تعني اعلى درجات الموافقة للبند المطروح للاستبانه .

اوافق - تعني الموافقة ولكن بدرجة اقل من سابقتها البند المطروح للاستبانه .

لا اوافق - تعني عدم الموافقة للبند المطروح للاستبانه .

لا اوافق بشدة - تعني اعلى درجات عدم الموافقة للبند المطروح للاستبانه .

٢ - يقوم بتعبئة هذه الاستبانة مدراء الادارات الحكومية (او من ينوب عنهم) المعنيين بالاشراف والتنفيذ لعقود الصيانة

والتشغيل ويتم تزويد كل ادارته باستبانته واحدة فقط وذلك للاجابة عليها .

٣ - التعاريف والمصطلحات والموضحة ادناه مستخدمه في الاستبانه :-

أ- عقد الصيانة والتشغيل المقترح :

هو عقد نموذجيا موحداً للصيانة والتشغيل للمباني الحكومية وتهدف مواده الى تغطية كافة البنود التي تتعلق

بالصيانة والتشغيل وكذلك كافة الانظمة والقوانين والتعليمات الصادرة من الجهات الحكومية التي تنظم علاقة

صاحب العمل بالمقاول لتلافي حدوث المشاكل والمنازعات .

ب - نظام تأمين مشتريات الحكومة ولائحته التنفيذية (١٣٩٧هـ) :

هو نظام تهدف مواده وبنوده الى تنظيم العلاقات والتشريعات بين الجهات الحكومية والمتعاقدين وايضاح كافة القواعد المرتبطة بتنفيذ الاعمال المقرره بالعقد .

ج - اعمال العقد :

وتعني تنفيذ جميع اعمال الصيانة والتشغيل والنظافة المشار اليها في العقد لصالح صاحب العمل وفي المنطقة المحدده ، وكذلك جميع التزامات المقاول موضوع هذا العقد وحسبما يتم تغييرها او تعديلها وفقاً لشروط العقد او احكامه .

د - صاحب العمل (الطرف الاول) :

يعني الوزارة او الجهة الادارية التي دعت الى تقديم العطاءات لتنفيذ العقد والتي تقوم باستخدام المقاول لتنفيذ الاعمال المقرره في العقد .

هـ - المقاول (الطرف الثاني) :

ويعني المؤسسة (المؤسسات) او الشركة (الشركات) الموقعة على العقد وباعتبارها الطرف الثاني للعقد .

و - المواصفات الخاصة والعامة :

وتعني المواصفات الواردة والمشار اليها في هذا العقد ، وكذلك جميع الاضافات والتعديلات لتلك المواصفات والتي اعتمدت ووافقت عليها الجهة المالكه .

ز - وثيقة العقد الاساسية (الاتفاقية) :

ويعني المستند الرسمي والموقع عليه من قبل اطراف العقد وهما صاحب العمل والمقاول والذي يعطي الصفة الرسمية للعلاقة التعاقدية بين الطرفين .

ح - العقد او مستندات العقد :

وتعني جميع المستندات والوثائق المرفقة بالعقد والتي يتم ختمها والتوقيع عليها من قبل اطراف العقد لاعطائها الصفة الرسمية كجزء لا يتجزء من مستندات العقد .

ط - قيمة العقد :

وتعني مجموع الاسعار الواردة في جداول الاسعار الخاصة بالعقد والمتفق عليها من قبل الطرفين والتي على اساسها يتم محاسبة المقاول وفق نسب الانجاز الدورية .

ي - المعدات والمواد المطلوبة :

وتعني الاليات والادوات والمعدات وكل مايلزم المقاول استعماله لتنفيذ اعمال الصيانة والتشغيل على الوجه المحدد بوثائق العقد الرئيسية .

٤ - هذه الاستبانة تم اعدادها لغرض اكايمي بحث وتعتبر جزء من رسالة ماجستير في الهندسة المعمارية بجامعة الملك فهد للبترول والمعادن وتهدف الى رصد وجهات نظر المختصين في الدوائر الحكومية حيال مستندات ووثائق عقود الصيانة والتشغيل الحالية والعقد المقترح لغرض توحيد عقود الصيانة للمباني الحكومية .

الجزء الاول : معلومات عامة

١- اسم الوزارة/ الهيئة/ الرئاسة/ الادارة: (اختياري)

٢- مسمى قسم الصيانة : (اختياري)

٣- سنوات الخبرة في مجال الصيانة :

- ٣ - ١ أقل من خمس سنوات ()
٣ - ٢ من خمس الى عشر سنوات ()
٣ - ٣ من عشر الى عشرون سنة ()
٣ - ٤ أكثر من عشرون سنة ()

٤ - المركز الاداري للشخص المجيب على هذه الاستبانة :

- ٤ - ١ مدير ادارة الصيانة ()
٤ - ٢ نائب مدير ادارة الصيانة ()
٤ - ٣ مدير ادارة التخطيط والدراسات ()
٤ - ٤ مدير ادارة المحاسبة ()
٤ - ٥ المشرف على العقد ()

٤ - ٦ اخرى (حدد)

٥ - عدد العاملون في ادارة الصيانة :

- ٥ - ١ أقل من عشرون فرد ()
٥ - ٢ ما بين عشرون الى خمسون فرد ()
٥ - ٣ ما بين خمسون الى مئة فرد ()
٥ - ٤ ما بين مئة الى مائتا فرد ()
٥ - ٥ أكثر من مائتي فرد ()

الجزء الثاني : انماط عقود الصيانة والتشغيل

١ - اعمال الصيانة والتشغيل يتم تنفيذها لديكم بواسطة :-

- ١ - ١ عمالة الادارة ()
- ١ - ٢ مقاول صيانة مستقل : ()
- ١ - ٢ - ١ مقاول سعودي فقط ()
- ١ - ٢ - ٢ تضامن اكثر من مقاول سعودي ()
- ١ - ٢ - ٣ تضامن مقاول سعودي مع مقاول اجنبي ()
- ١ - ٢ - ٤ مقاول اجنبي فقط ()
- ١ - ٣ كلاهما ، عمالة الادارة ومقاول صيانة مستقل ()

٢ - الحد الادنى لتصنيف المقاولين المسموح به للعمل لديكم :

- ١ - ٢ الدرجة رقم (١) ()
- ٢ - ٢ الدرجة رقم (٢) ()
- ٢ - ٣ الدرجة رقم (٣) ()
- ٢ - ٤ الدرجة رقم (٤) ()
- ٢ - ٥ الدرجة رقم (٥) ()
- ٢ - ٦ الدرجة رقم (٦) ()
- ٢ - ٧ اخرى (حدد)

٣ - نوعية المباني التي يتم صيانتها من قبلكم :

- ٣ - ١ مباني سكنية ()
- ٣ - ٢ مباني إدارية ()
- ٣ - ٣ مباني صناعية ()
- ٣ - ٤ مباني صحية ()
- ٣ - ٥ اخرى (حدد)

٤ - مجال التخصص في الصيانة هو :

- ٤ - ١ اعمال مدنية ()
- ٤ - ٢ اعمال معمارية ()
- ٤ - ٣ اعمال الصرف الصحي ()
- ٤ - ٤ اعمال ميكانيكية ()

- ٤ - ٥ اعمال كهربائية ()
- ٤ - ٦ تنسيق البيئة والخدمات الزراعية ()
- ٤ - ٧ المحطات المساندة ()
- ٤ - ٨ اعمال النظافة ()
- ٤ - ٩ اخرى (حدد)

٥ - هل يوجد لديكم نموذج موحد لعقد الصيانة والتشغيل :

- ٥ - ١ نعم ()
- ٥ - ٢ لا ()

٦ - اي من انماط عقود الصيانة والتشغيل التالية يتم استخدامها لديكم :

- ٦ - ١ عقد بنظام المبلغ المقطوع (Fixed Price Contract) ()
- ٦ - ٢ عقد التكلفة الفعلية زائد نسبة مئوية من التكلفة (Cost-Plus percentage Fee contract) ()
- ٦ - ٣ عقد بنظام التكلفة زائد اجرة مقطوعة (Cost -plus Fixed Fee Contract) ()
- ٦ - ٤ عقد بنظام التكلفة القصوى زائد اجرة مقطوعة مع ضمان الحد الاعلى للتكلفة (Cost -plus Fixed Fee with aguaranteed maximum contract) ()
- ٦ - ٥ عقد بسعر الوحدة حسب جداول الكميات (Unit Price Contract) ()
- ٦ - ٦ عقد التعرفة (Term Contract) ()
- ٦ - ٧ عقد البرمجة (Schedule Contract) ()
- ٦ - ٨ عقد تأجير عمالة ومعدات (Purchased labor contract) ()
- ٦ - ٩ اخرى (حدد)

٧ - صنف العقود التالية وبشكل عام من حيث ملائمتها كمعقد صيانة للإدارات الحكومية في المملكة العربية السعودية :

انماط عقود الصيانة والتشغيل	وافق بشدة	وافق	لا اوافق	لا اوافق بشدة
١ - عقد بنظام المبلغ المقطوع				
٢ - عقد التكلفة الفعلية زائد نسبة مئوية من التكلفة				
٣ - عقد بنظام التكلفة زائد اجرة مقطوعة				
٤ - عقد بنظام التكلفة القصوى زائد اجرة مقطوعة مع ضمان الحد الاعلى للتكلفة				
٥ - عقد بسعر الوحدة حسب جداول الكميات				
٦ - عقد التعرفة				
٧ - عقد البرمجة				
٨ - عقد تأجير عمالة ومعدات				
٩ - اخرى (حدد)				

٨ - يتم اعداد وثائق ومستندات عقود الصيانة لديكم بواسطة :

٨ - ١ منسوبي ادارة الصيانة (الوزارة) ()

٨ - ٢ ادارة المحاسبة ()

٨ - ٣ كلاهما ()

٨ - ٤ اخرى (حدد).....

٩ - في حالة اعداد وثائق ومستندات عقد الصيانة من قبل قسم المحاسبة ، الرجاء تحديد اي من مستويات التنسيق الآتية

يتم استخدامه لديكم بين قسم المحاسبة وقسم الصيانة وذلك من اجل اعداد وثائق عقد الصيانة :

٩ - ١ اعلى مستوى في التنسيق ()

٩ - ٢ مستوى متوسط من التنسيق ()

٩ - ٣ اقل مستوى في التنسيق ()

٩ - ٤ لا يوجد اي تنسيق ()

١٠- الرجاء تحديد اي من الوثائق الآتية يتم استخدامه لديكم غالباً في عقود الصيانة :

١٠ - ١ الوثيقة الاساسية للعقد ()

١٠ - ٢ الشروط العامة للعقد ()

١٠ - ٣ الشروط الخاصة للعقد ()

١٠ - ٤ المواصفات الفنية ومجال العمل ()

١٠ - ٥ جداول الكميات ()

١٠ - ٦ المخططات والرسوم ()

١٠ - ٧ جداول معدلات العمل ()

١٠ - ٨ النشـرات ()

١٠ - ٩ نماذج لتغير مخططات ومجال العمل ()

١٠ - ١٠ مخططات حسب التنفيذ ()

١٠ - ١١ انظمة ضبط الجودة ()

١٠ - ١٢ مخططات موقع العمل ()

١٠ - ١٣ جداول المعدات والانظمة ()

١٠ - ١٤ نظام تأمين مشتريات الحكومة ولائحته التنفيذية ()

١٠ - ١٥ اخرى (حدد).....

الجزء الثالث : الوثائق والمستندات المقترحة لعقد الصيانة والتشغيل العام الموحد

الوثائق والمستندات الرئيسية الآتية تمثل عقد الصيانة والتشغيل الموحد والمقترح تنفيذه في الدوائر الحكومية في المملكة العربية السعودية ، في كل وثيقة رئيسية يوجد عدد من البنود والمواد التعاقدية المرتبطة بالوثيقة وذلك من أجل تنظيم الحقوق والواجبات والمسئوليات بين صاحب العمل (الطرف الاول) والمقاول (الطرف الثاني) .

الرجاء تحديد أهمية هذه المواد والبنود التعاقدية المحددة لكل وثيقة من الوثائق المقترحة لعقد الصيانة والتشغيل الموحد وذلك حسب ماهو موضح في الجداول الآتية :-

الوثيقة الاولى : تعليمات عامة للمتنافسين				
المواد التعاقدية	وافق بشدة	وافق	لا اوافق	لا اوافق بشدة
١ - وثائق المنافسة				
٢ - حق الاشتراك في المنافسة				
٣ - المقاول الاجنبي				
٤ - اعداد وتقديم العرض				
٥ - زيارة الموقع				
٦ - تناقضات وثائق العقد				
٧ - العرض المخالف				
٨ - مؤهلات المنافسين				
٩ - بيان الموظفين والمراقبين الرئيسيين المرشحين لإدارة العقد				
١٠ - بيان المعدات المستخدمة في العقد				
١١ - بيان بالموردين والمقاولين من الباطن				
١٢ - بيان بالمواد والمعدات البديله				
١٣ - الضمان المؤقت				
١٤ - بيان بالتحفظات المقدمة من المنافسين				
١٥ - شهادة زيارة الموقع والشهادات الأخرى المطلوبة				
١٦ - خطاب تقديم العرض				
١٧ - الخبرات السابقة للمتنافسين في مجال الصيانة والأعمال الأخرى				
١٨ - أخرى (حدد)				

الوثائق الثانية : الشروط العامة

الموارد التعاقدية	وافق بشدة	وافق	لا اوافق بشدة	لا اوافق
١ - التعاريف				
٢ - صيغة المفرد والجمع				
٣ - العناوين الرئيسية وعناوين الهامش				
٤ - المستندات التي تفسر بعضها بعض				
٥ - معاينة موقع العمل				
٦ - الدفعة المقدمة والدفعات المرتبطة بتقديم الاعمال				
٧ - الضمان النهائي				
٨ - الاجتماع التمهيدي قبل الشروع في التنفيذ				
٩ - تسليم الموقع				
١٠ - المواقع واستعمال المصادر المختلفة				
١١ - صلاحيات مدير المشروع او ممثله				
١٢ - اتصالات المقاول مع صاحب العمل				
١٣ - العقود الاخرى بالموقع				
١٤ - الاشراف والموظفين واللفة				
١٥ - العمل بموجب القوانين والانظمة والعادات والتقاليد في المملكة				
١٦ - المسؤوليات والتصاريع والرخص				
١٧ - الضرائب والرسومات				
١٨ - التعريف على الاليات المستخدمة				
١٩ - العقود من الباطن				
٢٠ - نطاق اعمال العقد				
٢١ - اعمال الترميم				
٢٢ - قبول الاعمال واتمام المقاول للعقد				
٢٣ - اتمام الاعمال - الغرامات - التأخير				
٢٤ - المشرفون التابعون لصاحب العمل				
٢٥ - الوقاية من الحوادث والتقييد بوسائل السلامة				
٢٦ - تأمين المعدات والمواد والتجهيزات				
٢٧ - المواد واليد العاملة				
٢٨ - مدة سريان العقد				
٢٩ - الانتهاء لصالح صاحب العمل				
٣٠ - إيقاف الاعمال				
٣١ - التغييرات وتعديل العقد				
٣٢ - النتائج المترتبة على الانتهاء والإيقاف				
٣٣ - حل المنازعات				
٣٤ - الخداع والغش				
٣٥ - الاشعارات				
٣٦ - الاتفاق على عمولات احتمالية للحصول على العقد				
٣٧ - الرشوة والاكراهيات				
٣٨ - المتحجرات والاثار				

المواد التعاقدية	وافق بشدة	وافق	لا اوافق	لا اوافق بشدة
٣٩- التقويم				
٤٠- ساعات العمل				
٤١- حماية البيئة				
٤٢- حقوق براءات الاختراع وملكيته				
٤٣- التشريع الساري على العقد				
٤٤- مناطق العمليات والتخزين				
٤٥- معدات المقاول وعدده ومؤنه				
٤٦- استخدام وسائل النقل والشحن الوطنية				
٤٧- استخدام خدمات التأمين والبنوك والعقار والتمويل المحلية				
٤٨- بطاقات تعريف الموظفين				
٤٩- اسكان عمال وموظفي المقاول				
٥٠- متطلبات مكتب المقاول بالموقع				
٥١- ضمان الدفعة المقدمة (نموذج موحد)				
٥٢- الضمان النهائي (نموذج موحد)				
٥٣- شهادة الانجاز (نموذج موحد)				
٥٤- مستخلص الدفعات النورية (نموذج موحد)				
٥٥- شهادة تعهد (نموذج موحد)				
٥٦- اخرى (حدد)				

الوثيقة الثالثة : الشروط الخاصة ومجال العمل				
المواد التعاقدية	وافق بشدة	وافق	لا اوافق	لا اوافق بشدة
١- عام				
١-١ متطلبات عامة				
٢-١ متطلبات اساسية				
٣-١ وصف الموقع				
٤-١ المصطلحات الفنية للعقد				
٥-١ مصطلحات الاداء				
٦-١ حجم العمل المطلوب				
٧-١ الاستشاري والخبرات الهندسية المطلوبة من المقاول				
٨-١ الوقود واستهلاك الزيوت				
٢ - التنظيم وعماله المقاول				
١- ٢ بطاقات التعريف للعماله				
٢- ٢ الزيئه الموحد لعمال المقاول				
٢- ٢ المظهر والسلوك				
٢- ٤ تدريب عمال المقاول				
٢- ٥ تسليم وقبول الموقع من قبل المقاول				
٣ - الشئون الإدارية				
٣- ١ نظام الاداره				

المواد التعاقدية	اوافق بشدة	اوافق	لا اوافق	لا اوافق بشدة
٢-٣ ادارة شئون العماله				
٣-٣ الانظمة الادارية المستخدمة بواسطة الحاسب الالى				
٤ - المشتريات والمؤن				
١-٤ المتطلبات الاساسية				
٢-٤ المتطلبات المتكرره				
٣-٤ نظام الاستبدال				
٤-٤ طرق التخلص من العناصر المهجوره والتالفه				
٥ - طرق التحكم وضبط الجوده				
١-٥ اهداف برنامج ضبط الجوده				
٢-٥ مؤهلات منسوبي برنامج ضبط الجوده				
٣-٥ انظمة ضبط الجوده المستخدمه				
٦ - وسائل السلامة ومكافحة الحريق				
٧ - اعمال الصيانة				
١-٧ اعمال الصيانة مسبقه التخطيط				
٢-٧ اعمال الصيانة الوقائية				
٣-٧ اعمال الصيانة الخاصة بالطوارئ				
٤-٧ اعمال الصيانة الخاصة بالمعدات والخدمات المسانده				
٥-٧ بيان بالمباني المطلوب صيانتها				
٦-٧ بيان بشبكات الكهرباء المطلوب صيانتها				
٧-٧ بيان بشبكات التلغونات المطلوب صيانتها				
٨-٧ شبكة ومضخات المياه المطلوب صيانتها				
٩-٧ محطات وخزانات الوقود المطلوب صيانتها				
١٠-٧ صيانة شبكة الصرف الصحي والري وتجميل الموقع				
١١-٧ صيانة الانظمة الميكانيكية				
١٢-٧ صيانة انظمة الانذار الخاصة بالحرائق والانظمة الالكترونية				
٨ - تشغيل الانظمة الموجوده بالموقع				
٩ - اعمال النظافة				
١-٩ اعمال النظافة اليومية				
٢-٩ اعمال النظافة الاسبوعية				
٣-٩ اعمال النظافة الشهرية				
١٠ - التقارير النورية				
١١ - الاضرار المتعلقة بالاممتلكات				
١٢ - الملاحق				
١-١٢ مخطط الموقع العام				
٢-١٢ المخطط التفصيلي للمرافق والمباني				
٣-١٢ بيان بالانظمة والمعدات الموجوده بالموقع				
٤-١٢ بيان بمؤهلات عماله المقاول				
١٣- اخرى (حدد)				

الوثيقة الرابعة : جداول الكميات

المواد التعاقدية	وافق بشدة	وافق	لا اوافق	لا اوافق بشدة
١- نسبة اعمال العقد ومرتبآت العمال وقطع الغيار من قيمة العقد				
٢ - معدل مرتبآت العمالة التفصيلية				
٣ - معدل استهلاك قطع الغيار بالتفصيل				
٤ - نسبة اعمال النظافة بالتفصيل				
٥ - نسبة اعمال الصيانة بالتفصيل				
٦ - نسبة اعمال التشغيل بالتفصيل				
٧ - نسبة اعمال الطوارئ بالتفصيل				
٨ - نسبة المعدات والمؤن				
٩ - نظام الصرف				
١٠- طرق صرف المواد الاستهلاكية				
١١- الغرامات والتأخير				
١٢- أخرى (حدد)				

الوثيقة الخامسة : المواصفات الفنية

المواد التعاقدية	وافق بشدة	وافق	لا اوافق	لا اوافق بشدة
١ - المواصفات الفنية للأنظمة الموجودة بالموقع				
٢ - بيان بمصنعين ووكلاء الانظمة الموجودة بالموقع				
٣ - بنك معلومات لسجل الانظمة الموجودة بالموقع				
٤ - طرق الاتصالات والاشعارات السابقة بين صاحب العمل والمقاول				
٥ - وثائق اضافية اخرى				
٦ - البلاغات				
٧- أخرى (حدد)				

الوثيقة السادسة : وثيقة العقد الاساسية

المواد التعاقدية	وافق بشدة	وافق	لا اوافق	لا اوافق بشدة
١ - تطبيق نظام تأمين مشتروات الحكومة والانظمة التنفيذية				
٢ - الاعمال المطلوب من المقاول تنفيذها				
٣ - موقع العمل				
٤ - مدة سريان العقد				
٥ - قيمة العقد وطريقة الدفع				
٦ - مندوب صاحب العمل				
٧ - مندوب المقاول (مدير المشروع)				
٨ - حظر التنازل للغير				
٩ - توقيع صاحب العمل والمقاول				
١٠- أخرى (حدد)				

ترسل أجوبة الاستبيانة على أحد العنوانين الآتيين :

نقيب مهندس طلال بن علي الحازمي

ص ٠ ب : ٩٤٣٩ - مكة المكرمة - السعودية

د ٠ عبدالمحسن ابن عبدالله الحماد

ص ٠ ب : ٢٢٢ الظهران ٣١٢٦١ - السعودية

مع خالص تحياتي وتقديري لتعاونكم المثمر

**TOWARD STANDARDIZATION OF PUBLIC BUILDING MAINTENANCE
CONTRACTS IN SAUDI ARABIA**

PART ONE: BACKGROUND INFORMATION:

1. Ministry/Presidency/Authorities/Directorate Name: (Optional)
.....
2. Authorize Maintenance Department Name: (Optional)
.....
3. Years of maintenance department experience:
 - 3.1 Less than five years. ☐
 - 3.2 From five to ten years. ☐
 - 3.3 From ten to twenty years. ☐
 - 3.4 Above twenty years. ☐
4. Respondent's administrative position who will be assigned to answer the questionnaire:
 - 4.1 Director of Maintenance Department. ☐
 - 4.2 Acting Director of Maintenance Department. ☐
 - 4.3 Director of Maintenance Planning and Studies Department. ☐
 - 4.4 Director of Accounting Department. ☐
 - 4.5 Maintenance Contract Supervisor. ☐
 - 4.6 Others, please specify
5. The official number of maintenance staff in the maintenance department:
 - 5.1 Less than twenty people. ☐
 - 5.2 From twenty to fifty people. ☐
 - 5.3 From fifty to one hundred people. ☐
 - 5.4 From one hundred to two hundred people. ☐
 - 5.5 More than two hundred people. ☐

PART TWO: TYPES OF MAINTENANCE AND OPERATION CONTRACTS

1. The maintenance work has been executed in your department by:
 - 1.1 Direct labor. ☐
 - 1.2 Independent maintenance contractor:
 - 1.2.1 Saudi Contractor. ☐
 - 1.2.2 Saudi - Saudi Joint Venture. ☐
 - 1.2.3 Saudi - Foreign Joint Venture. ☐
 - 1.2.4 Foreign Contractor. ☐
 - 1.3 Both direct labour and maintenance contractor. ☐
2. The minimum required contractor grade classification:
 - 2.1 Grade Number 1 ☐
 - 2.2 Grade Number 2 ☐
 - 2.3 Grade Number 3 ☐
 - 2.4 Grade Number 4 ☐
 - 2.5 Grade Number 5 ☐
 - 2.6 Grade Number 6 ☐
 - 2.7 Other, please specify
3. The types of buildings to be maintained in your department:
 - 3.1 Residential Buildings. ☐
 - 3.2 Office Buildings. ☐
 - 3.3 Industrial Buildings. ☐
 - 3.4 Medical Buildings. ☐
 - 3.5 Other, please specify:
4. Area of specialization in maintenance:
 - 4.1 Civil ☐
 - 4.2 Architectural ☐
 - 4.3 Sanitation ☐
 - 4.4 Mechanical ☐
 - 4.5 Electrical ☐
 - 4.6 Plantation and Landscaping ☐

- 4.7 Supporting Plant ☐
- 4.8 Janitorial ☐
- 4.9 Other, please specify:

5. Do you have a standard form of maintenance contract in your department:

- 5.1 Yes ☐
- 5.2 No. ☐

6. Specify what type of building maintenance contracts you frequently use:

- 6.1 Fixed price contract. ☐
- 6.2 Cost plus percentage contract. ☐
- 6.3 Cost plus fixed fee contract. ☐
- 6.4 Cost plus fixed fee with a guaranteed maximum contract. ☐
- 6.5 Unit price contract. ☐
- 6.6 Term contract. ☐
- 6.7 Schedule contract. ☐
- 6.8 Purchased labour contract. ☐
- 6.9 Other, please specify.....

7. Please rate these contracts in general terms of their suitability to governmental maintenance department in Saudi Arabia.

Maintenance Contract Type	Strongly Agree	Agree	Disagree	Strongly Disagree
1. Fixed Price Contract.				
2. Cost plus percentage contract.				
3. Cost plus fixed fee contract.				
4. Cost plus fixed fee with a guaranteed maximum contract.				
5. Unit price contract.				
6. Term contract.				
7. Scheduled contract.				
8. Purchased labour contract.				
9. Others, please specify				

8. Are the maintenance contract documents in your department prepared by:
- 8.1 The Maintenance Department. ☐
 - 8.2 Accounting Department. ☐
 - 8.3 Both of the above. ☐
 - 8.4 Other, please specify
9. In cases where maintenance contract documents are prepared by the Accounting Department, please indicate which of the following levels of coordination between the Accounting Department and Maintenance Department has been used in preparing the maintenance contract documents:
- 9.1 Maximum coordination level. ☐
 - 9.2 An average coordination level. ☐
 - 9.3 Minimum coordination level. ☐
 - 9.4 No coordination at all. ☐
10. Please specify which of the following contracting documents you usually use in your department in your maintenance contracts:
- 10.1 Articles of agreement. ☐
 - 10.2 General conditions of contract. ☐
 - 10.3 Specific conditions. ☐
 - 10.4 Specifications and scope of work. ☐
 - 10.5 Bill of quantities. ☐
 - 10.6 Plans and drawings. ☐
 - 10.7 Schedule of rates. ☐
 - 10.8 Bulletins. ☐
 - 10.9 Addenda. ☐
 - 10.10 As-built drawings. ☐
 - 10.11 Quality control and quality assurance measures. ☐
 - 10.12 Site location maps. ☐
 - 10.13 Equipments and systems schedules. ☐
 - 10.14 Government procurement laws and regulations. ☐
 - 10.15 Others, please specify

PART THREE: PROPOSED STANDARDIZED PUBLIC MAINTENANCE CONTRACT DOCUMENTS
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The following are the major maintenance documents to be used in the proposed standardized public maintenance contract. For each document, there are a set of contractual issues to be included to regulate and control the rights, duties and obligations of the two parties.

Please specify your responses to the importance of the these contractual issues and their needs to be included in the maintenance contract documents:

First Document: General Instructions to Bidders				
Contractual Issues	Strongly Agree	Agree	Disagree	Strongly Disagree
1. Bid documents package.				
2. Selection of contractor.				
3. Foreign contractors regulations.				
4. Preparation of bids.				
5. Site visit requirements.				
6. Contract documents contradiction.				
7. Disqualified proposal.				
8. Qualification of prospective bidders.				
9. List of personnel and supervisors to perform the work.				
10. List of equipment to be used in the contract.				
11. List of suppliers and sub-contractors.				
12. List of alternative materials and equipment.				
13. Preliminary guarantee (bid bond).				
14. Bidders reservations list.				
15. Site visit and other required certificate.				
16. Bid presentation letter.				
17. Bidder's previous experience in performing similar or comparable work.				
18. Others, please specify				

Second Document: General Conditions				
Contractual Issues	Strongly Agree	Agree	Disagree	Strongly Disagree
1. Definitions.				
2. Single and plural utterance.				
3. Major and marginal titles.				
4. Documents interpret each other.				
5. Site visit inspection.				
6. Advance and progress payments.				
7. Final guarantee.				
8. Pre-starting conference.				
9. Site hand-over.				
10. Site utilities usage.				
11. Contractor manager or his representative authority.				
12. The contractor's communication with the owner.				
13. Other contract in the site.				
14. Supervision, personnel and language.				
15. Compliance with the Kingdom laws, rules, customs and tradition.				
16. Responsibilities, permits and licenses.				
17. Taxes and dues.				
18. Contractor vehicles identification.				
19. Sub-contracting contracts.				
20. Contract scope of work.				
21. Rehabilitation work.				
22. Work approval.				
23. Work progress, penalty and delay.				
24. Owner supervisors.				
25. Incident precautions and compliance with safety measures.				
26. The provision of required equipments, materials and other installations.				
27. Materials and personnel.				
28. Contract duration.				
29. Termination at owner convenience.				
30. Suspension of work.				
31. Changes and contract modification.				
32. Obligations upon suspension or termination.				
33. Dispute settlement.				
34. Shams and swindle.				
35. Notices.				
36. The contractor commission to obtain the contract.				
37. Bribe and similar attitudes.				
38. Site fossil and heritage.				

Second Document : General Conditions				
Contractual Issues	Strongly Agree	Agree	Disagree	Strongly Disagree
39. Calendar.				
40. Working hours.				
41. Environmental protection.				
42. The ownership of invention.				
43. Contract laws.				
44. Operational locations and storing.				
45. Contractor equipment, supplies and tools.				
46. The use of local transportation and loading systems.				
47. The use of local insurance, banking, real estate, and catering services.				
48. Identification tags.				
49. Accommodations of contractor personnel.				
50. Site office requirements.				
51. Advance payment (standard form).				
52. Final guarantee (standard form).				
53. Progress certificate (standard form).				
54. Periodical invoicing payment (standard form).				
55. Undertaking certificate (standard for).				
56. Others, please specify				

Third Document : Specific Conditions and Scope of Works				
Contractual Issues	Strongly Agree	Agree	Disagree	Strongly Disagree
1. General.				
1.1 General requirements.				
1.2 Basic requirements				
1.3 Site components descriptions.				
1.4 Contract technical terminologies.				
1.5 Performance terminologies.				
1.6 Volume of the required work.				
1.7 Required consultations and engineering experience.				
1.8 Fuel and oil consumption.				
2. Organization and contractor personnel.				
2.1 Personnel identification tags.				
2.2 The contractor's personnel uniform.				
2.3 The contractor's personnel appearance and attitude.				
2.4 The contractor's personnel training.				
2.5 The contractor's personal medical fitnesses.				
3. Administration Affairs.				

Third Document: Specific Conditions and Scope of Works (Continue)				
Contractual Issues	Strongly Agree	Agree	Disagree	Strongly Disagree
3.1 Administration procedure.				
3.2 The contractor's personnel management.				
3.3 Computerized management system				
4. Procurement and supply.				
4.1 Elementary requirement.				
4.2 Continuous requirement.				
4.3 Replacement procedures.				
4.4 Scrap and obsolete items destruction.				
5. Quality control and quality assurance.				
5.1 Quality control and quality assurance objectives.				
5.2 Quality control and quality assurance personnel.				
5.3 Quality control and quality assurance program.				
6. Safety measures and fire protection.				
7. Maintenance work.				
7.1 Planned maintenance.				
7.2 Preventive maintenance.				
7.3 Emergency maintenance.				
7.4 Maintenance of supporting equipment and services.				
7.5 List of buildings to be maintained.				
7.6 List of electrical systems to be maintained.				
7.7 List of telephone systems to be maintained.				
7.8 Water systems and pumps maintenance.				
7.9 Fuel station and fuel tank maintenance.				
7.10 Sanitation, landscaping and irrigation system maintenance.				
7.11 Mechanical system maintenance.				
7.12 Fire alarm and other electronic system maintenance.				
8. Installed system operation on the site.				
9. Janitorial work.				
9.1 Daily janitorial work.				
9.2 Weekly janitorial work.				
9.3 Monthly janitorial work.				
10. Periodic reports.				
11. Property damages.				
12. Attachments.				
12.1 Site location map.				
12.2 Site facilities and building location.				
12.3 List of existing systems and equipment.				
12.4 List of contractor personnel qualifications.				
13. Other, please specify				

Fourth Document: Bill of Quantities				
Contractual Issues	Strongly Agree	Agree	Disagree	Strongly Disagree
1. The percentage of various works, personal payment and spare part from the total contract cost.				
2. Contractor personnel rate.				
3. Spare parts consumption rate.				
4. Janitorial work rate.				
5. Maintenance work rate.				
6. Operation work rate.				
7. Emergency work rate.				
8. Equipment and tools rate.				
9. Payment procedure.				
10. Penalty and delay.				
11. Consummed materials procedure.				
12. Others, please specify				

Fifth Document: Technical Specifications and Attachments				
Contractual Issues	Strongly Agree	Agree	Disagree	Strongly Disagree
1. Technical specifications of installed systems.				
2. List of systems manufacturers and dealers.				
3. Historical background data banks.				
4. Owner and previous contractor reporting and communication system.				
5. Additional contract documents.				
6. Proclamation.				
7. Others, please specify				

Sixth Document : Basic Contract Charter (Agreement Form)				
Contractual Issues	Strongly Agree	Agree	Disagree	Strongly Disagree
1. The application of government procurement laws and regulations.				
2. Required contract work.				
3. Location of the work.				
4. The contract duration.				
5. Contract cost and payment procedure.				
6. Owner representatives.				
7. Contractor representative.				
8. Prohibition of contract assignment.				
9. Owner and contractor signature.				
10. Others, please specify				

This questionnaire shall be mailed to one of the following address:

Dr. Abdul-Muhsen Abdullah Al-Hammad
P. O. Box 222, Dhahran 31261, Saudi Arabia

Capt./Engr. Talal Ali Abdullah Al-Hazmi
P. O. Box 9439, Makkah, Saudi Arabia

With the best of regard for your cooperation.

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- ٥٢- نظام تأمين مشتريات الحكومة واجراءات الصرف واثرها على رجل الاعمال السعودي : ورقة عمل مقدمة الى المؤتمر الاول لرجال الاعمال السعوديين ، الدمام ٢٧ - ٢٩ جماد أول ١٤٠٣هـ .

VITA

Talal Ali Al-Hazmi was born in Makkah, Kingdom of Saudi Arabia, on April 18th, 1963. Upon graduation from secondary school, he enrolled for a six year programme at the School of Environmental Design at King Abdul Aziz University in Jeddah.

In June, 1985, he attended a training programme in Management and Project Implementation Techniques - CFC Egletons - France. In June, 1987 he graduated with a Bachelor of Science in Architectural Engineering from King Abdul Aziz University. Subsequently, in November, 1987, he joined the Royal Saudi Air Defense Forces as First Lieutenant Engineer in the Engineering and Housing Directorate. In August, 1988, he graduated from the Royal Air Defense Institute in Jeddah. In September, 1989, he attended a course in the Construction of Underground Shelter- Helsinki, Finland, organized by Temet Oy and sponsored by the Royal Saudi Air Defense Forces.

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